State Responsibility for the Global Ecosystem

The Case of the Polar Regions

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DECLARATION

This Thesis contains no material which has been accepted for a degree or diploma by the University or any other institution, except by way of background information and duly acknowledged in the Thesis, and to the best of my knowledge and belief, no material previously published or written by another person, except where due acknowledgment is made in the text of the Thesis.

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ABSTRACT

A new sense of state responsibility for the global ecosystem has emerged over the last three decades. It embraces doctrines such as sustainable development, the 'polluter-pays' principle, the precautionary principle, intergenerational equity and the common heritage of mankind. When coupled with international security and economic considerations, the development of these concepts heralds the emergence of a new international environmental order and its attendant circle of interdependence which binds all states.

The emergence of shared concerns about humanity's impact on the global environment has its roots in a series of environmental crises which have served to confirm the planet's vulnerability and underscored the need for joint responsibility towards the global ecosystem. However, the acceptance by states of this responsibility has not been pervasive as inter-state cooperation from within the traditional framework of sovereign independence has always been problematic. But this study argues that endorsing the reality of our common ecological bonds means that state political boundaries are becoming increasingly insignificant as multilateral environmental policies and laws are pursued. This should not be interpreted as an abrogation of the rights of sovereign states, *per se*. Rather, it should confirm the transboundary character of environmental issues and the need for rethinking the traditional doctrines of sovereignty to emphasise cooperative approaches to dealing with environmental issues.

One area where this has been successfully attempted is the Antarctic, which is now the subject of one of the most comprehensive environmental regimes ever established. The counterfactual region is the Arctic, where the eight sovereign states have made only little progress towards sharing responsibilities for the ecosystem. Case studies of these two regions illustrate that in the Antarctic, the existence of a legal regime which redefines traditional notions of sovereignty has been instrumental in facilitating a substantial environmental management regime. By contrast, the absence of any re-development of the concept of sovereignty in the Arctic has impeded the progress of a comprehensive pan-Arctic regime for environmental management. However, in recent times there have been positive indications of a willingness by the Arctic states to redefine their traditional sovereign approach to common environmental issues, albeit in cautious terms.

There are obvious fundamental differences between the Arctic and the Antarctic. In any case, given the peculiarities of Antarctica one must necessarily be cautious in using it as a basis for general assumptions and policies for ecosystem management in other areas. This notwithstanding, developments in the Antarctic and the growing trend of internationalization of environmental issues in other regions call for transboundary approaches similar to the Antarctic experience. The Arctic would seem to be adopting this approach. Furthermore, this study argues that the new international environmental order requires such an approach to global ecosystem management.

The work is divided into five chapters which describe the genesis and nature of responsibility for the global ecosystem; the geographic and geopolitical architecture of the polar regions; the Antarctic as a mature regime; the progression towards an Arctic eco-management regime; and concludes with a comparative analysis and lessons of experience from the polar case studies.

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LIST OF ACRONYMS

AAT	Australian Antarctic Territory
ABC	Australian Broadcasting Corporation
ACF	Australian Conservation Foundation
AGSO	Australian Geological Survey Organisation
AJIL	Australian Journal of International Law
AMAP	Arctic Monitoring & Assessment Programme
APP	Arctic Pilot Project
ASOC	Antarctic & Southern Ocean Coalition
ATCM	Antarctic Treaty Consultative [Party] Meeting
ATCM/WP	ATCM working paper
ATS	Antarctic Treaty System
BANZARE	British, Australian and New Zealand Antarctic Research Expedition
BAS	British Antarctic Survey
BIOMASS	Biological Investigation of Marine Antarctic Systems and Stocks
CAI	Comité Arctique International
CAPP	Canadian Association of Petroleum Producers
CARC	Canadian Arctic Resources Committee
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CCAS	Convention for the Conservation of Antarctic Seals
CEE	comprehensive environmental evaluation
CEMP	CCAMLR Ecosystem Monitoring Programme
CEP	Committee on Environmental Protection (Madrid Protocol)
CFC	chlorofluorocarbon
CFSP	common foreign and security policy [of Maastricht Treaty]
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMECON	Council for Mutual Economic Assistance
COMNAP	Council of the Managers of National Antarctic Programs
CRAMRA	Convention for the Regulation of Antarctic Mineral Resource Activities
CSAGI	Comité Spéciale de l'Année Géophysique Internationale
EARP	Environmental Assessment and Review Process
EC	European Community
ECOSOC	Economic and Social Council (UN)
EEA	European Economic Area
EEZ	exclusive economic zone (LOSC)
EFTA	European Free Trade Association
EIA	environmental impact assessment
FAO	Food and Agriculture Organization (UN)
FID	Falkland Island Dependencies
FoE	Friends of the Earth
GEF	Global Environment Facility
GIUK	Greenland - Iceland - United Kingdom [Gap]
GNP	gross national product
GOSEAC	Group of Specialists on Environmental Affairs and Conservation (SCAR)
HILBIO	Effects of Human Activity on High Latitude Biodiversity project
IAEA	International Atomic Energy Agency
IASC	International Arctic Science Committee
ICC	Inuit Circumpolar Conference
ICES	International Council for Exploration of the Seas
ICRW	International Convention for the Regulation of Whaling

ICSU	International Council of Scientific Unions
IEE	initial environmental evaluation
IG	intergenerational equity
IGY	International Geophysical Year (1957-8)
ILM	International Legal Materials
IMF	Interim Multilateral Fund (of the Montreal Protocol)
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
IPY	International Polar Year (1882-3, 1932-3)
IUCN	International Union for the Conservation of Nature and Natural Resources
IWC	International Whaling Commission
LC	London Convention (formerly London Dumping Convention)
LNG	liquefied natural gas
LNTS	League of Nations Treaty Series
LOSC	Law of the Sea Convention
LRTAP	Convention on Long-Range Transboundary Air Pollution
MAB	Man and the Biosphere Programme
MARPOL	International Convention for the Prevention of Pollution from Ships
NAFTA	North American Free Trade Association
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
NSR	Northern Sea Route
NWT	North-West Territories
OECD	Organization for Economic Cooperation and Development
OEEC	Organization for European Economic Cooperation
PCB	polychlorinated biphenyl
PCIJ	Permanent Court of International Justice
RIAA	Report of International Arbitration Awards
RSA	Republic of South Africa
SBS	Special Broadcasting Service (Australia)
SCALOP	Standing Committee on Logistics and Operations (SCAR/COMNAP)
SCAR	Scientific Committee on Antarctic Research
SCOPE	Scientific Committee on Problems of the Environment (EC)
SMA	specially managed area (Madrid Protocol)
SPA	specially protected area (Madrid Protocol)
TEWG	Transitional Environmental Working Group (Antarctic Treaty System)
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCLOS III	United Nations Conference on the Law of the Sea # III
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific & Cultural Organization
UNGA	United Nations General Assembly
UNTS	United Nations Treaty Series
US	United States
USSR	Union of Soviet Socialist Republics
WCED	World Conference on Environment and Development
WCIP	World Council of Indigenous Peoples
WHO	World Health Organization
WMO	World Maritime Organization
WWF	World Wide Fund for Nature

Introduction

This is a study of the world system of states and their rights and duties with regard to the making of international environmental policy and law, with a particular focus on the polar regions - the Arctic and the Antarctic.

The study is both normative and descriptive. It is also multi-disciplinary in the sense that a variety of social science disciplines including legal studies, political science, international relations theory and policy analysis are employed to help shed light on the issues.

This work investigates the ability of the world society of states to develop a cohesive and compatible approach to ecosystem management and protection within the prevailing and evolving politico-legal order of state sovereignty. In this context an ecosystem is defined as:

> a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.[1]

The global ecosystem, which includes humans, is composed of a diversity of regional ecosystems. Together they are woven into the complex fabric which is the global biosphere – that part of the earth which sustains *all* life. Taking responsibility for regional ecosystems is the fundamental step towards integrating respect for the global ecosystem in policy and law.

Responsibility, in the sense it is used here, implies accountability. All states have a particular perception of their place in the world order and this place, by virtue of the rules of international law, must acknowledge the existence of other states with the same rights and obligations as themselves. Such is the general principle of the responsibility of states in international law. The notion of responsibility can be quantified by analysing the degree to which states adopt certain emerging principles and concepts of international environmental law, such as acting in a precautionary manner, taking due regard of the possible existence of future generations, promoting development which is sustainable, making provision for the distribution of benefits of common resources among all states, and the degree to which they can be held

accountable for unacceptable environmental degradation. Responsibility may be found in the first instance at a regional level and then, because the invasion of the legal interests of a neighbouring state may have far wider effects, at a global level. But this study argues that responsibility can also be seen as moral duty which may not necessarily involve a breach of legal duty, particularly in view of the fact that legal rules may only be *emerging*.

The most profound acknowledgment to be made is that responsibility for the global ecosystem, in a comprehensive and enduring form, is beyond the political, physical and financial resources of the world's states, and is therefore likely to prove elusive. What *is* possible, however, is a new kind of regional response and value-system which will bring all of the components of regional ecosystems under review when the various levels of government decide on matters of policy. Policies can intentionally become ecosystem-orientated, not only for the purposes of restoring fragile or vulnerable areas, but also in a bid to prevent unacceptable levels of harm from occurring in any area within the jurisdiction of affected states. Appropriate regional responses may meld together to form a matrix of global responsibility in acknowledgment of the common ecological interdependence of the world's states. This is because the fate of one state is inextricably linked to the fate of others, particularly its trading partners and military allies.

The point of departure for this study is the fact that political emancipation or individual freedom which is an attribute of state sovereignty, is being challenged by a perceived need for states to address, in concert, the world's environmental ills.[2] These calls for unprecedented inter-state cooperation at once both embrace the state and venture beyond it. This study does not advocate the dismantling of the state system in some kind of altruistic pogrom; on the contrary, it canvasses the thesis that global ecological interdependence will require a re-examination of the traditional notions of sovereignty, to induce a more fundamental sensitivity to the ecological common good. That sensitivity is seen as the first step along the road towards environmental problem-solving through international cooperation, legitimate and effective law-making and a demonstrated measure of accountability to the rest of the world.

In the context of this study, the traditional approach to the coexistence of sovereign states means the cultural, political and economic heterogeneity which characteristically underpin the notion of the independent state.[3] This approach has generally implied a minimum application of the rules of coexistence between states, as elaborated in the Charter of the United Nations. The Charter affirms the sovereign equality and integrity of *all* its Member states in its Article 2.1 and 2.4.

The central proposition underlying this study is that such a minimalist approach has tended to circumscribe international cooperation in the field of the environment in the past. This is not to say that cooperation does not take place, but rather that in environmental terms, states are often reluctant to cooperate when it appears that they have more to lose and little to gain, particularly economically and in the short-term.

International security, the global economy and the global environment are the three major issues in world politics today (Porter & Brown 1991:2). (It might also be argued that international human rights too is a major issue, but this appears to have direct links to security, the economy and the environment.) The newest of these three issues to rise to prominence is the global environment which, from a position of low politics only a decade or two ago, is now fixed high on the political agenda of many states, certainly the developed, industrialized ones. While this may demonstrate growing recognition that the viability of all states is either directly or indirectly affected by the degradation of the biosphere, it does *not* demonstrate a consensual approach to the issue. The addition of the global environment to the world political agenda merely completes the circle of complex interdependence between all states. The existence and nature of trade agreements between states illustrates this point. Domestic environmental conditions and legally binding environmental protection standards will '...constitute a significant component of the terms [of trade]...' between states because of the potential for artificial trade barriers to be erected through subsidized pollution control measures (Gaines 1991:464). In addition, the world's money-lenders and aid-givers have the power to make their business deals with environmentally-recalcitrant states conditional upon certain environmental considerations. Interdependence is also underscored by the fact that transfrontier effects of environmental bad-practice can be seen as a breach of an affected state's sovereign integrity and hence possibly its security and economic viability. But such linkages as these present enormous difficulties when states try to balance their desires for security, economic prosperity and environmental harmony: difficulties which no state can deal with on its own.

The regions selected for examination in this study are the Arctic and the Antarctic. While it may be argued that these areas of the planet are unique, especially in terms of inhospitable climate and relative lack of habitation, there are a number of reasons why they are strategically, politically and scientifically significant.[4] Moreover, each offers possibilities of contrast in terms of the formation, operation, evolution and effectiveness of environmental management regimes. They also offer useful illustrations of the nexus between science and politics, since the problems of greatest salience to the polar regions - accelerated global climate change for one - require a high degree of scientific investigation. Intrinsically, the different approaches to

sovereignty displayed by Arctic as opposed to Antarctic states is one justification for the selection of these regions as case studies. Furthermore, the choice may be even more appropriate considering that some sovereign Arctic states are also major actors in the Antarctic and therefore their application of the principles of sovereignty may prove to be malleable according to the regional context in which they are applied.

Philosophical Rationale

In a world characterised by increasing political and economic interdependence, it is no surprise that ecological factors would one day play an enhanced role in future global relations. Our common ecological destiny is not a new concept, but until recently imperatives to protect the biosphere had largely been subsumed by the desire for peace and economic prosperity in a discordant world. A new world order is emerging, and some see it as being characterised as much by *ecological* as by economic or social or political interdependence.[5]

The 1992 United Nations Conference on Environment and Development (UNCED) implied that a new global environmental agenda is emerging and will require states to adopt a distinctly new type of diplomacy in their dealings with one another (United Nations 1992:Preamble). This poses as serious a challenge to the widely-held doctrine of the mutually-respected independence of states as, for example, wars do, in this modern time of complex economic and strategic interdependence.

Another proposition central to this study, which has direct links to the UNCED process, is that a *symbiotic* relationship between the ecosystem and development will become a necessary condition for planetary survival. Furthermore, such a relationship will require the reshaping of international cooperation so that eco-management regimes more closely reflect the environmental, political, legal, economic and social realities and challenges faced by the states, both as independent entities and as members of the global community, in the 21st century. Planetary rights and obligations will need to be fulfilled without prejudice to, or if necessary by redefining sovereign rights, the common good and resource security. This is the axis of the work's thesis: that global ecological interdependence will require a re-examination of the traditional approach to sovereignty. These concepts are further discussed, and their usefulness validated, in Chapter 1.

The study has been undertaken because of a certain belief in the pictures presented to us about the state of the planet, some of which are quite alarming. There is little current literature written from an anti-environmental perspective but a much larger

amount which is pro-environmental. Lewis (1992) considers that the global environment faces two profound ideological threats: one, the more serious, comes from anti-environmentalists who would have us believe that the ecological crisis is a mirage; and another comes from radical environmentalists who would have us tear down all liberal democratic constructs and re-invent a better society.[6] This work lies somewhere between the two extremes and is based simply on the belief that reality will overcome radicalism and that cooperative, integrated management of the world's resources is essential for a healthy future. This is not only a personal view, but one shared by many environmentalists, the United Nations and policy and law-makers throughout the world. This study will show that no matter what the motivating force, cooperation between states can only be beneficial. Whether cooperation will be cost-effective in the sense that the cost of the benefits will be worthwhile, is another issue entirely and one not pursued within the scope of this work.

Research Objective

The research objective is to identify factors which have enhanced or inhibited the capacity of the polar states to plan appropriate environmental policy and to carry it out effectively by making environmental law, within the general ambit of their competence as states in international law. By identifying such factors it will be possible to illustrate the thesis that state coexistence is necessarily undergoing a transformation, with more of an emphasis on the common good and less on the inviolability of state sovereignty, in the context of the polar regions at least. It is suggested that this transformation may not be occurring particularly because states want it that way, but rather because ecological interdependence dictates that it should be so.

The polar regions were selected as suitable subjects for analysis because of the unusual way in which each is managed in relation to the other. It is thought that these two regions which are traditionally - and sometimes quite inappropriately - seen as analogous, are useful because their underlying political factors are, in fact, quite dissimilar. The Arctic is the province of eight sovereign states, while the Antarctic is in the custody of 42 states with no legally perfected sovereignty, although claims to sovereign territory are facts in law. Accordingly, states with an Antarctic interest may not be *directly* affected by bad environmental behaviour occurring in the region or originating from elsewhere, and their motivation to negotiate environmental law will be quite different from that of the Arctic states. In the north, states and nations are not only in conflict over the allocation of resources among competing groups, but they may be directly and sometimes quite severely affected by both local and transboundary environmental problems (Switzer 1994:322).

Finally, this study seeks to discover if any lessons can be learnt from the environmental management of polar regions which might be usefully applied to other areas of the globe.

Analytical Rationale

In developing the analytical rationale for this study, it was necessary to decide at the outset what the aim of ecosystem management was, and hence what state responsibility for the global ecosystem might entail. In other words, it was necessary to have a benchmark by which to measure *realistic* goals of eco-management of the polar regions, primarily because individual values vary so greatly.

History has witnessed the head-on clash between all of the ideological and philosophical colours of the environmental spectrum which represent, at one end, the radicals and at the other, the ultra-conservatives.[7] As a result of their differing values, disparate groups have often had difficulties finding common ground on which to begin meaningful negotiation about environmental issues. Chapter 1 describes the evolution and progression of a new environmental agenda in terms of both social behaviour and international law. It illustrates that there has never been, and likely never will be, consensus on ecosystem values and indeed this is part of the problem of determining what is *appropriate* with regard to polar eco-management. Chapter 1 also shows that, in a legal sense, three of the fundamental objectives of eco-management are:

i) to deal with existing causes of damage to ecosystems;

ii) to minimize or prevent additional forms of damage; and

iii) to preserve and use ecosystems rationally and sustainably.

These objectives are attempted by states through combinations of regional, national and international arrangements, including legal sanction.

Much is now being written about the global ecosystem and international environmental diplomacy.[8] However, scant attention is paid to the polar regions. They can be perceived as either vast, forbidding wastelands or alternatively as storehouses of great riches, but these are simplistic and conflicting portraits of places of great human and natural theatre. In the worst case scenario of enhanced global warming, for instance, the major impacts may be felt in the polar regions first. Sound management through a

balanced and integrated approach to environmental and developmental questions is therefore crucial for the polar regions because:

- much of the world's weather is generated in the northern and southern polar regions;
- essential sciences are conducted in these natural laboratories and will lead to a better understanding of global processes;
- the nature of the polar ecosystems is such that they can provide early warning of process changes;
- both are locations where traditional notions of security have been, or are in the process of being, re-defined and where Cold War hostilities are being replaced by attempts at multilateral scientific, economic and environmental cooperation.

But do those states with responsibility for the polar regions see their obligations in this light? The study attempts to answer this, in addition to raising fundamental questions about the role and position of the sovereign state in a world order more concerned than ever before with environmental issues.

In order to carry out this assessment, it is essential to focus not only on the spectrum of activities constituting ecosystem management but also to place such factors in the broader context of the relationship between state sovereignty and collective action, particularly with respect to international environmental regimes. To what degree are the polar regions becoming arenas of regional cooperation? Is *de facto* internationalization occurring? To what extent is customary practice or tentative experiment giving way to substantive environmental law? What kind of institutional arrangements are proposed or in place to give effect to these provisions? In general, can it be argued that a new international *environmental* order, as distinct from a new strategic or *political* order, is emerging?

The study's methodological approach is to first identify both the basis and nature of state responsibility for the global ecosystem in order to construct an analytical template for application to the case studies. Three criteria will be used to assess the level of responsibility: legitimacy, effectiveness and accountability. Each criterion has clearly-defined features and when combined with the emerging concepts and principles making up the generic notion of *responsibility*, they provide a solid analytical tool which is relative to both the restorative and proactive features of polar environmental management.

The study describes the geographical and geopolitical architecture of the polar regions; traces and analyses the evolution of environmental regimes in the Arctic and Antarctic;

and places such factors in the broader context of state sovereignty and international cooperation. Since it cannot be claimed that the author has expertise in the internal relations of polar states, the study is based on the best available official and unofficial reports and writings of polar bureaucracies and commentators.

Thesis Structure

The multi-disciplinary nature of this work tended to make the information appear dissonant at times. Therefore it has been necessary to carefully construct a chronological sequence of events which in the first instance is broad-ranging, setting the conceptual and analytical paradigms. The study becomes more focussed in its presentation of the case studies. Finally the information is treated in general terms as the relevance of the thesis emerges.

Chapter 1 is concerned with identifying evolving paradigms of global ecosystem responsibility. It defines the work's parameters by describing the historical development of this ethic which has led to the thesis that traditional approaches to sovereignty need re-examining. This section describes environmental crises and the roles and behavioural responses of key actors. The Chapter proceeds by determining that existing limits to state sovereignty imposed by international law, together with natural limitations imposed through the complex interdependency between sovereign states, has led to attempts to reconsider the notion of sovereignty. The work then seeks to establish the appropriate roles and practises of governments in the light of new ideas about sovereignty and proposes an analytical template with appropriate application to the case studies - the polar regions.

Chapter 2 continues the contextual paradigm by describing the particular geographical and geopolitical idiosyncrasies of the polar regions. It elaborates further on their significance in the global context and hence justifies their utility to the study.

Chapters 3 and 4 contain the descriptive case studies of the Antarctic Treaty System as a mature regime, and queries whether the present Arctic situation is that of an emerging regime. Both Arctic and Antarctic states have begun to address the issue of ecosystem management in a more holistic way than previously. With regard to the Antarctic, this is a substantial departure from the desire of some of those same states to exploit the non-living resources of the region. For the Arctic states, the current cooperative trend heralds a courageous step towards collective problem-solving. The Antarctic Treaty Parties have taken innovative measures by constructing an environmental protection protocol which is progressively being ratified through State

legislatures. There is general optimism that the Protocol will survive the ratification process to enter into force. Conversely, the Arctic states still have a long road ahead before they reach the same theoretical level of control. This may not even be possible, given that the politics of the region are complicated and unpredictable in this early stage of the dissolution of the former Soviet Union.

The concluding Chapter 5 makes a comparative analysis of the regions. It seeks to answer such questions as: on what basis did the states negotiate a quite comprehensive regulation of human activity in the Antarctic territory when they had no legally proven sovereignty there? Given that there is an Antarctic ecosystem management instrument of law passing through the ratification process, can it be concluded that state sovereignty has impeded the progress of transboundary, multilateral or global environmental law pertaining to the Arctic, where sovereignty is a primary condition and where no such substantive ecosystem management regime exists? What implications, if any, can be drawn from the case studies for international cooperation, global ecosystem responsibility and the concept of state sovereignty as we approach the 21st Century?

Sources

The reference sources used for this study include formal government reports; other secondary sources such as books, research publications and conference proceedings; and some primary materials collected by the author during structured and informal interviews in Finland, Norway, Scotland, England, Canada and Australia.

Limitations

The principal limitations of the study are that because regime dynamics continue to operate, many aspects of Arctic politics remain in transition; similarly in the Antarctic, the agenda is by no means complete. It was necessary therefore to establish a cut-off date, after which no further information would be sought or included. That date was 30 April 1995.

It should also be mentioned here that the author has had substantial problems obtaining information from some Arctic countries, particularly from official sources. Many contacts made during a northern hemisphere research trip failed to forward promised information and subsequent follow-up letters were ignored.

In conclusion, this study is cautious about the value of polar experience as a general model for the kind of new international strategic, economic, ecological and political order prescribed by the UNCED process. Polar experience may however, provide valuable insights when assessed against evolving perceptions of nature, changing geopolitical circumstances, current environmental concerns and attempts to create effective international environmental regimes. At the very least the polar regions are interesting areas to study because of the peculiar nature of their problems and the unique legal and political solutions employed.

1

Evolving Paradigms of Responsibility for the Global Ecosystem

Introduction

The 1992 United Nations Conference on Environment and Development (UNCED) - the most recent international conference with the global ecosystem on its agenda - was attended by officials from the majority of the world's states. It was, in fact, the largest gathering of world leaders in contemporary history. A concurrent meeting also held in Rio de Janeiro, the Global Forum, was attended by thousands of non-governmental organization (NGO) representatives. While there was genuine concern displayed by some who attended in Rio, others would no doubt have treated the venue as another forum for public posturing. Notwithstanding, the unprecedented attendance at these two conferences, together with the fact that they were thought necessary in the first place, points to some fundamental problems with the existing international political, economic, legal and social orders and their nexus to the maintenance of global environmental integrity.

We are confronted daily with statistics regarding the state of the planetary ecosystem: degraded air and water quality; artificially-induced climate change and the enhanced greenhouse effect; ozone depletion; species extinction; poverty and unsustainable population growth; terrestrial degradation by necessity- and profit-driven agricultural practices; disease epidemics; and the constant collapse and rebuilding of empires, states, economies, institutions and social infrastructure. Debates rage *ad infinitum* on the causes, effects and remedies. In the case of, say, the disappearance of a particular species of hunted animal, both the cause and remedy may be obvious. But in other cases there are complex linkages to a range of behaviours with cumulative effects and 'risk spirals'[9] neither easily recognisable nor easily reversible over a short timeframe. Some ecological problems such as airborne and seaborne pollution, ozone depletion and deforestation transcend domestic affairs, having transfrontier or global implications. In the case of transportable contaminants, they may become not only

physically *uncontrollable* beyond their point of origin, but politically uncontrollable as well (Caldwell 1984:224). To complicate matters, there is little consensus either on the nature of the problems, their remedies, or whether for that matter, some problems *actually* exist.

Therefore, despite debates about the accuracy of statistics, and also because of them, this study advances the thesis that global ecological interdependence requires a re-examination of traditional notions of sovereignty in order to promote responsibility for the global ecosystem. The thesis has been arrived at in light of mounting evidence, principally from the UNCED, that the integrity of our global ecosystem is being dangerously eroded. This has occurred especially since the Industrial Revolution and more recently, the post World War II growth in the number of sovereign states. Various actors have vigorously campaigned for both universal awareness of global environmental problems and increased international cooperation in solving them. Their actions have sometimes challenged the traditional perceptions of both sovereign independence and what is often described as *unsustainable* economic development. Other actors have resisted such efforts at imposing limitations upon their activities. A re-examination of sovereignty will, therefore, involve the juxtaposition of international law with evolving perceptions of nature, changing geopolitical circumstances and current environmental concerns.

This Chapter identifies some of the major environmental crises which have driven contemporary environmental politics, tracing the emergence and clarifying the roles of key actors and the subsequent development of the intellectual foundations of a re-thinking of traditional approaches to state sovereignty.

Three core components can be identified. The first concerns the carousel of environmental crises which has been powered by the existence of independent sovereign states and their desire for economic enrichment and equality. On board the carousel are such factors as human population growth and poverty; food production and consumption patterns; depletion of non-renewable resources and species diversity; resource security; and the massive 20th century industrial and technological expansion with their accidental by-products of ozone depletion, acid rain, potential global climate change and the like. Each of these factors is in some way or another linked to the others and each has provided a degree of political and economic input in attempts to halt or reverse the destructive cycle - assuming, of course, that we are heading down that road.

The second component is the place of key actors in the process of global environmental politics and law-making. The key actors are sovereign states, the

United Nations and its organs, scientific communities and the global environmental movement. Both individually and collectively these actors have been involved in the advancement of what some see as a new global environmental agenda for the 21st century.

The third component identified and defined in this Chapter is a re-thinking of governance in light of this developing agenda of responsibility for the global ecosystem. Are we heading into a trend towards *permeable* sovereignty, an expansion on the traditional approach, as a more efficient means of managing our global ecosystem?

To test this proposition about permeability, the Chapter concludes by identifying five key principles which have evolved during the past several decades into paradigms of responsibility for the global ecosystem and which are inextricably bound to the notion of sovereignty. These five principles, under the general rubric of ecosystem responsibility, are then used as part of a template for analysis of the polar eco-management arrangements. The analysis will show the nature and extent of the erosion of sovereignty in favour of international regime formation, and thus the template also requires parameters by which regime function can be measured. Three variables: legitimacy, effectiveness and accountability, fulfil this role. It will be shown that these variables accord with the broader notion of responsibility for the global ecosystem.

1.1 A Carousel of Environmental Crises

Reconciling human behaviour with indiscriminate and indifferent natural processes, with the aim of designing and maintaining a sustainable coexistence between all elements of the biosphere, is proving to be an enormously difficult exercise – politically, technologically and morally. The challenges may be common to all but the cause/effect linkages are problematic. While this work deals specifically with the polar regions, some statements can be made about global environmental crises in general terms.

1.1.1 The Human Dimension : Population and Poverty

Many of our problems began around 5000 BC when hunter-gatherers and herders discovered the utility of agriculture and grouped into '...settled, complex, hierarchical societies' (Ponting 1991:37). Early societies *were* responsible for ecological degradation but the contribution of any one generation could only be

considered small in the extended timeframe of nearly 7000 years of social history.[10] From post-Industrial Revolution times, however, no such disclaimer can be made for today's global society.

One of the most crucial characteristics of 20th century life is the rapid expansion of population numbers. The planet's human population has doubled between 1950 and 1987 and is estimated to reach 6.25 thousand million by the year 2000, with over 90% of the projected increase to take place in developing countries.[11] It is also estimated that in the corresponding period the amount of arable land will have declined by nearly 50% (Porter & Brown 1991:3). It has been stated that: 'Overpopulation and rapid population growth are intimately connected with most aspects of the current human predicament...'.[12] This is because the formula: *total population multiplied by its per capita consumption* can be used as one means of determining the rate of ecosystem disruption (Porter & Brown 1991:5).

Furthermore, while it is considered that the world's food resources can - theoretically - feed 40 thousand million people, of the current 5.3 thousand million human population an estimated 14.6 million children die annually from hunger-related diseases.[13] No matter how accurate the statistics are, it is plain that poverty - a social and political problem - has the potential to be a major factor in environmental stress, as both a cause and an effect.

This is because in many regions of the world, developed and developing alike, poor agricultural and land management practices like urban degradation, deforestation, overgrazing and overcropping have become a means to an end – the survival of the human species and the perpetuation of economic prosperity. Paradoxically these practices have also become ends in themselves by jeopardizing the carrying capacity of the particular ecosystems. This in turn puts other ecosystems and ultimately the whole biosphere into peril. The conjunction is based on the potential for these scenarios to undermine the political and social security of developing countries in particular, but of developed countries too, because of the expanding and intricate economic and strategic interdependence of states (Hurrell & Kingsbury 1992:3).

Agriculture is one case in point. The use of highly mechanised equipment, sophisticated irrigation techniques, soil enhancing fertilizers and pesticides and herbicides have helped to intensify food production to all time record levels in the mid-1980s (Ehrlich & Ehrlich 1990:20). But in so doing they have also helped to make major contributions to land and water-table degradation. In 1988, the United States consumed more grain than it produced, primarily because one-third of its crops were drought-affected (Ehrlich & Ehrlich 1990:9). Also in the 1980s an estimated 35

million people in Africa's Sahel region were at risk of starvation as their lands became deserts (WCED 1990:75). It is difficult to know how, or indeed if, these problems can or should be rectified.

So-called *natural* disasters like drought and flood take their toll on land weakened by human abuse.[14] For example, in some cases the natural consequences of flooding have been aggravated by a cycle of overgrazing, overcropping and forest clear-felling, which all loosen the top soil and alter the earth's ability to hold moisture, resulting in erosion, the silting up of river systems and altered local ecosystems. This can interrupt the resource base and hence the ability of primary producers to manage their resources sustainably.

Consequently, for one reason or another, there may be as many as 300 million so-called *environmental refugees* whose homelands can no longer support them.[15] Recent examples are parts of Haiti, Chad, Ethiopia, Uganda and Somalia. It may be simply that there are too many people; or that the soil is in poor condition; that drought and flood have contributed to crop failures; that flood and wind have eroded top soil; that river topography and resources have been significantly altered; that forests have been cleared but the nutrient-poor land cannot sustain agriculture; or that the general disaffection of the population has contributed to conflicts resulting in mass refugee migration, revolution and war. As Ehrlich and Ehrlich point out, food shortage is not the only consequence of overpopulation (1990:20).

But this *disaster perspective* is not a readily accepted fact. Economic growth and development have also contributed to a greatly enhanced living standard and have positive flow-on effects like better health and education, lower fertility and infant mortality rates and increased knowledge of how to use resources productively.[16] Notwithstanding, in many cases growth and development have come at a price. During the 20th century, but primarily since 1950, global use of fossil fuels has increased 30-fold and industrial production has risen 50-fold (WCED 1990:75). But in 1980-82, only 26% of the world's population (that is, in developed countries) consumed 80% of commercial energy, 85% of paper, 76% of steel and 86% of other metals produced (WCED 1990:77). This consumption pattern by the developed world demonstrates the disparity between rich and poor. Such disparity has always existed, but in modern times the coefficient has widened under the influence of the carousel of environmental crises. This has led to a struggle for economic growth by developing countries and a growth and development ethic by developed countries, all of which puts synergistic stresses on the global environment.[17]

The UNCED process recognized poverty as a 'complex, multidimensional problem' ranging across the state and into the international realm (United Nations 1992:Ch.3). An inherently difficult facet of poverty is the need to balance the conservation and preservation of resources with the dependence by the population on these resources for survival. One position which the UNCED arrived at involved participation at every level, from the individual to global institutions, empowering the poor at the most fundamental level of their existence to take responsibility for preservation and enrichment of the resources of their livelihoods. However, this is very difficult to achieve if you and your children are starving.

As contributing factors to environmental crises, population and poverty are inextricably linked to consumption patterns developed during the 20th century.

1.1.2 Accidental By-Products of the Industrial Revolution

While the 20th century pattern of industrial expansion and economic growth has had a profound effect on the lives of millions of people, some of its accidental by-products like air and water pollution have the potential to render primary resources *unusable*.[18] Large-scale international environmental problems like potential global climate change, ozone depletion and acid rain have been tagged with producing this consequence. Their influence can be traced back to the Industrial Revolution but their effects are only now becoming better understood. Three of these by-products are discussed below and are indicative of the kinds of global environmental problems which are now out of the hands of states as independent entities and onto the global agenda.

Potential Global Climate Change

The terms *greenhouse effect* and *climate change* tend to induce confusion because too little is genuinely understood about the possible, or indeed the probable, consequences of human activity on climate. The scientific community readily admits that the threat of artificially-induced, irreversible climate change is problematic and while the physical basis is fairly well understood, the more complex feedback mechanisms are not (Zillman 1992:26). This does not mean that we should not be concerned about potential global climate change, however.

The magnitude of change, geographical distribution patterns, the types of changes which might be expected (and in some cases whether these may even be beneficial) and importantly, the timing of any changes are issues with which the scientific community, policy- and law-makers are grappling. One commentator has suggested

that it may be *decades* before quantitative, detailed proof is available.[19] These kinds of questions have led to uncertainty about the policies and legal actions required to satisfactorily address the problems.

The physical basis for climate change may have been discovered as early as 1827, when French mathematician Fourier discerned the role of carbon dioxide in the atmosphere as having a 'hothouse' effect (Lunde 1992:54). Since that time there was very little scientific interest in such theories until much more conclusive evidence was found less than four decades ago. This study does not attempt to chronicle the complete development of the greenhouse and climate change theories.[20] However, because this is one issue which has particular relevance to the polar regions, some time will be spent here examining the issues.

The *greenhouse effect* is a popular euphemism for increased warming of the earth's surface, but it neither resembles the process which occurs in garden greenhouses, nor takes account of the earth's *natural* greenhouse effect (Zillman 1992:14).

The mechanisms of global climate are dynamic, involving solar radiation; the spherical shape of the earth which causes the temperature to decrease from the equator to the poles; the natural greenhouse condition which causes temperature to decrease upwards from the earth's surface; the exchange of mass, energy and momentum between the atmosphere and other components of the climate system; and the earth's rotation (Zillman 1992:13). The atmosphere is a thin shell of air bound to the earth by gravity and is composed primarily of nitrogen (78% by volume) and oxygen (21%). Water vapour and argon are the next largest components, with carbon dioxide and methane making up the bulk of the remainder, albeit in trace quantities only. The latter are collectively referred to as radiatively active trace gases or, popularly, *greenhouse* gases.

The surface warming of the earth is essentially determined by the radiative properties of the so-called greenhouse gases. While the atmosphere is virtually transparent to the incoming shortwave radiation (heat) from the sun, it is almost opaque to the longer wavelength infrared radiation emitted by the solar heated earth, thereby trapping some of the outgoing heat (Zillman 1992:14). In lay terms this exchange of heat is in approximate equilibrium, thereby keeping the earth's temperature relatively constant. But the addition of small amounts of greenhouse gases to the atmosphere reduce the loss of heat and a new equilibrium is set up at a higher temperature.

This temperature constancy is relative because climate itself is subject to variability. Using time scales from millions of years to just one day, it has been possible to

identify *natural* climatic changes. Alterations in the earth's shape and rate of rotation, the amount of radiation emitted from the sun, land and ocean floor topography, continental drift and the internal processes of the climate system all effect global climate processes and are considered *natural* occurrences. Alterations not considered natural are *anthropogenic* and include changes in land use patterns and atmospheric composition, which have the potential to cause irreversible trends in climatic conditions (Zillman 1992:21-3).

When the earth's natural greenhouse condition is disturbed, say by significant alteration to the atmospheric concentration of carbon dioxide, a new equilibrium in heat exchange will be created. In the 1950s, the scientific community began to have concerns about the prospect of artificially induced and escalated changes to global climate via a disequilibrium of the earth's natural greenhouse condition. Their concerns were based on two simple premises:

- physical arguments which suggested that the greater the concentration of carbon dioxide in the atmosphere, the greater would be the surface warming; and
- the expectation that the burning of fossil fuels which had been going on since the Industrial Revolution would eventually lead to significant build-up of carbon dioxide in the atmosphere (Zillman 1992:23).

Monitoring of the upward trend in average atmospheric carbon dioxide from the late 1950s on revealed that the new temperature profile was likely to be warmer. Unprecedented scientific research has since indicated that global warming *will* have an effect on global climate processes (Zillman 1992:23-4).

The links between major greenhouse gases and their anthropogenic sources and uses have been fairly well established. Carbon dioxide primarily comes from fossil fuel burning, deforestation and cement production; methane from rice paddies, ruminants, biomass burning, gas and coal fields, land fills and the tundra; chlorofluorocarbons, non-existent in nature, come from industrial and consumer goods, refrigeration and solvents; and nitrous oxide comes from biomass burning, agriculture and fossil fuel burning. These four gases together are thought to account for about 95% of the enhanced greenhouse effect (Zillman 1992:25).

The major consequences of an enhanced greenhouse effect, given all the uncertainties, are likely to be:

- that there will be a general global temperature warming; and
- that there will be a general global sea level rise.

These two consequences are a primary motivation for presenting the polar regions as case studies in this work, as the polar regions are both global weather factories and repositories of a significant proportion of the earth's fresh water, contained within their ice. If the current trends continue, an average global temperature rise of between 1.5° and 4.5° C may occur during the next 50 years or so. A consequential sea level rise of as much as 1.5 metres may also occur.[21] The implications for the polar regions, and *ergo* the rest of the world, may be enormous despite the lack of understanding about the potentially mitigating feedback processes. Even though we do not know enough about the potential for enhanced climate change to satisfy all the critics and disbelievers, can we afford not to take it seriously? What is needed, despite the uncertainty, is precautionary and preventative action to both halt the anthropogenic climate alterations and to protect the polar laboratories which supply essential scientific information and warning indicators.

Ozone Depletion

Ozone depletion is a separate though related problem. Ozone (O_3) is an atmospheric gas found in the stratosphere. It is created by solar radiation and it in turn absorbs ultraviolet radiation, screening out UV-B wavelength rays which are harmful to living tissues (Schneider 1976:11). Ozone depletion may have the potential to severely undermine the primary resource base which sustains humanity and indeed may have health consequences for humans themselves. The causes and consequences are far from certain, however.[22]

Ozone depletion was first reported by atmospheric scientists, and its consequential effects on living systems predicted by biological scientists, as early as 30 years ago. At that time however, realistic long-term funding for *effects* research was not forthcoming (SCOPE 1992:7).

The possible connection between ozone and chlorofluorocarbons was brought to the attention of the wider scientific community in 1974 by Mario Molina and Sherry Rowland in an article in the scientific journal *Nature* (Rowland 1990:281). These two scientists hypothesised that the destruction of ozone was brought about by the chlorine atoms of CFCs. When CFCs are released into the atmosphere, they assist in trapping outgoing heat, which contributes to the enhanced greenhouse effect. The normally inert CFCs are also broken down by extremely energetic solar radiation and consequently release chlorine atoms. The chlorine atoms react with other chemicals in the atmosphere and this process is known to destroy ozone, thereby reducing the

thickness of the protective layer (Massey 1992:176). The fluorine released by the breakdown of CFCs is also thought to interact with ozone (Schneider 1976:11).

In the mid 1980s, confirmation of the severity and potential consequences of this reduction of the ozone layer was a catalyst of unprecedented import to the development of international environmental law for the atmosphere.[23]

Importantly, proactive polar eco-management will preserve the polar laboratories which figure prominently in ozone research, especially since ozone depletion has been identified over Antarctica and to a lesser extent over the Arctic.

The two scenarios discussed above are, to some degree, still not quantifiable. Speculation about the accuracy of computer modelling techniques has meant that almost as much activity today is concerned with the science of methodology as it is with the science of prediction. Indeed, some scientists query whether the generalized trend of global warming is, in fact, a natural phenomena of climate variability rather than artificially-induced (Paltridge pers.comm.). There is little speculation about acid rain, however.

Acid Rain

Acid rain is a generic term used to describe a variety of compounds in the atmosphere which, when they come into contact with moisture, fall as acidic gases and particles (Porter & Brown 1991:8). Sulphur dioxide emissions from industry are currently around 180 million metric tons annually. When combined with nitrogen oxide from automobiles and the agricultural burning of forests, for example, the emissions are diluted in the atmosphere into sulfuric and nitric acid. The resulting precipitation falls as rain with a higher than normal acidic content.[24]

Since the late 1970s, acid rain has been identified as being a widespread phenomena affecting North America and Europe, where the increased acidity of precipitation has been declared responsible for the killing of forests, the damaging of inland waterway ecosystems and for the accelerated decay of buildings. The extent of damage by acid rain to soils is unknown (WCED 1990:2).
Acid rain became an icon for an insidious, uncontrollable carousel of environmental crises which put environmental diplomacy onto the public agenda in the so-called *developed* northern hemisphere. Given the large numbers of independent states coexisting in Europe and the relative proximity of both the United States and Canada, concern about this phenomena and recognition of the fundamental principle that the effects were transboundary in nature, led to an hitherto unprecedented level of

international cooperation. The 1979 Convention on Long Range Transboundary Air Pollution (LRTAP) is a direct result of the identification of and concern over acid rain.[25]

Together both the population/poverty scenario and the accidental by-products of industrial expansion are thought by some to have taken their toll on the earth's natural resource base. This may or may not be the case; notwithstanding, the depletion of natural resources is worthy of consideration in light of the developing stream of protective international law.

1.1.3 Threats to the Natural Resource Base

Humans co-exist with unknown millions of other animal and plant species in a biosphere rich in living and non-living life-sustaining commodities. These all belong in the category of *natural resources*. The UNCED determined that development cannot proceed independently of rational conservation and management of these resources – living and non-living, renewable and non-renewable – because in the long run, *all* resources are finite (United Nations 1992:Ch.2). Even so-called *renewable* resources like plants and animals are only renewable insofar as their genetic material and habitats remain viable.

What has happened in recent history is that in our struggle for survival we have intervened in the natural cycle of life and death. Human cleverness in using and manipulating our environment has instigated what some see as an unprecedented acceleration in the depletion of natural resources to a point, in some cases, beyond replenishment levels.[26] Myers, for instance, suggests that we are probably losing between 50 and 200 living species a day (Myers 1993a:179). Despite debate about the accuracy of these kinds of statistics, what can be said is that until the value of these resources and their place in the global ecosystem is better understood, allowing their depletion beyond replenishment levels is morally unacceptable to many people.

Human ingenuity has also facilitated the invention of substitutes and alternatives, but three primal resources - clean air, arable soils and uncontaminated water - cannot be synthetically replicated to the same degree as other materials.

The disappearance of natural resources or the depletion of species diversity is not simply an aesthetic loss; it has far more wide-ranging effects. The UNCED process took up the issue of species loss with some seriousness, culminating in the conclusion of a framework protection and trade treaty, the UN Convention on Biological Diversity, which was signed on 5 June 1992 and entered into force on 29 December

1993.[27] The Preamble to the Convention reaffirms states' rights to own and obligations to conserve their biological resources for the good of all humankind of this generation and beyond. It also promotes sustainable use of these resources so that the whole world can retain the benefits of species diversity.[28] A range of other international environmental law aims to protect wildlife and their habitats.[29]

The disappearance of species diversity may not reversible, unlike other examples of environmental harm described above. Notwithstanding, the ecological interdependence evidenced in the preceding discussions has stimulated a growing realization that we are all part of one Earth, although sequestered in our human domain it is often very difficult to see the world as a whole, of which we - as individuals - are only small, insignificant units. The factor which best determines that the circle of interdependence includes environmental issues is the asymmetrical distribution of costs and benefits between states from such transboundary environmental problems as these. When environmental problems become transboundary in nature, they gain the potential to threaten both the security of states and their economic viability (Carroll 1988:3).

The examples of environmental stresses given above also illustrate how insignificant state borders are in containing problems, both physically and politically. Not only have independent political units often been unable to take full responsibility for the harm that escapes their custody, but also they are becoming increasingly critical of other states which abuse their *own* resources. The global debate about deforestation practices in the Amazon is one case in point.[30]

This study has begun from a position which is distinctly idealistic in a deliberate attempt to show that while international protective laws have grown out of just such a position, they ultimately reflect concerns about human impact on the global environment in a Realpolitik world of security and economics. These idealistic underpinnings have indicated a need for international interaction among the world system of states to find solutions to many problems which, although common in a broad sense, have unequal distribution in real terms. The key actors have therefore been not only the states themselves but the global overseers - the United Nations and its various organs; the scientific community, which has supplied crucial data upon which political decisions have been based; and the environmental movement, whose role has been to disseminate information into the public arena and to enliven the political debates.

1.2 Key Actors

The global political system is composed of the world's population of individuals, formed into diverse nations and inhabiting sovereign states. This system of states is the prevailing universal political institution, said to exist in a state of anarchy, that is, in the absence of a world government, as each state has competence (in theory) over the use and allocation of its own resources. This heterogeneous nature of states has not, however, precluded states from adopting certain common interests and values through inter-state cooperation, thereby forming a global community - a so-called *society* of states.

In ecological terms, the world society of states is said to exist in circumstances which have been described as 'collective insecurity': a new condition of threats to state security based on global environmental problems, which *binds all states* and calls for *unprecedented* international cooperation in problem-solving.[31] Doubts have been raised about the capacity of the system of states to provide the kind of supranational governance indicated by the increasing incidence and seriousness of transboundary or global environmental problems because of the challenges such cooperative behaviour pose to traditional notions of state sovereignty. It is thought, for instance, that the '...fragmented and uncoordinated political order...' characteristic of the co-existence of sovereign states cannot adequately address the protection and rational management of the global ecosystem (Caldwell 1990:151).

Imperatives for unprecedented international cooperation are gaining increasing prominence within the community of lateral thinking policy- and law-makers as this echelon considers ways to bridge the gap between the reality of global environmental threats and the void of effective international rules to deal with these threats at appropriate overarching levels *within* the established political framework of state sovereignty. At the most fundamental level, states are principal actors in this process in both an independent capacity and by virtue of their role as members of the international society of states - the United Nations.

1.2.1 States as Independent Entities

A state is a political and legal institution characterised by defined territory, a permanent population, government and independence[32] (that is, the capacity to enter into relations with other states, also sometimes called sovereignty). Historically, certain territory and people were the property or patrimony of the ruler or sovereign and hence the term

sovereignty evolved (Bull 1977:19). Defined territory and a permanent population go hand in hand in the sense that a social community must be stable enough to facilitate the establishment of an effective *political* community. The best evidence of this is the existence of a government with centralised administrative and legal organs. Statehood is achieved in part when independence from other states and their interference is confirmed (Brownlie 1990:72-4).

The term *sovereignty* originally described the nature of states which, within their respective territories, were completely independent of each other and had absolute power over their own affairs.[33] This was called absolute sovereignty. In time sovereignty came to be regarded as a social contract between the people and the government. This was known as popular sovereignty and it characterises the modern political system wherein dissatisfied citizens may rid one government of its power and install another. Sovereignty now connotes quite a deal more than mere independence or popular contractual rights and obligations. Whereas state borders were once considered impervious, political post-modernists view state sovereignty in a more pragmatic light, considering that the legal membrane may in fact be permeable, allowing for trans-border intercourse between a variety of actors which does not destroy the underlying fabric of the nature of the state. In today's situation of complex ecological interdependence, the post-modernist concept of sovereignty is gaining increasing credibility in moral terms, while posing enormous difficulties in politico-legal terms.

A state has *exclusive* competence within its own territory and *general* competence to legislate on all matters '...unless international law contains specific rules to the contrary' (de Lupis 1987:5, 21). This is not a straightforward limit to sovereignty as there must be '...unequivocal proof that such a title to restrict the sovereignty exists' (de Lupis 1987:23). Notwithstanding, the state theoretically enjoys both supremacy over its subjects in a particular territory (internal sovereignty) and the freedom from interference by other states (external sovereignty) (de Lupis 1987:3).

Matters which come exclusively under the domestic jurisdiction of states are the *reserved domain* of a state and thus its jurisdiction is not bound by international law (Brownlie 1990:291). However, making an absolute distinction between the domestic and international domains of sovereignty is problematic, particularly with regard to environmental matters: a valid exercise of state power in the domestic realm may have transboundary repercussions which would elevate that act into the international domain (Brownlie 1990:292). Importantly, after the making of an international agreement, a state cannot subsequently invoke conflict with, or

deficiencies in, its own domestic laws as a defence against a breach of its international legal obligations.[34]

The basic doctrine of the law of states deems states to be sovereign and equal with uniform legal personality.[35] This implies a number of rights, but also corresponding obligations upon states in their relations with one another. It also imposes necessary limitations upon states because of the coexistence of sovereignties (Brownlie 1990:288).

Because states are sovereign and equal and there is a duty of non-intervention imposed upon each of them with regard to the others, the making of global environmental regulations which may impinge upon a state's internal sovereignty is impossible without that state's consent and active participation. Furthermore, diverging values, interests, costs, benefits and other domestic factors among states makes the pursuit of global environmental policies vulnerable to the dynamics of economic and military power and the relative bargaining positions of the states.[36]

As this study is concerned primarily with environmental threats of a transboundary or global nature, it is necessary to set aside the issue of unilateral behaviour by a state in its own realm of jurisdiction and to concentrate more on multilateral actions. In this sense international environmental policy- and law-making is centred on the United Nations; but it is acknowledged that only the states themselves, and in a few cases regional economic organizations, can be signatories to pieces of international law.

1.2.2 The United Nations, its Agencies and Programs

The United Nations is the coalition of world states and a forum which reflects world opinion. It has been suggested that membership of an international organization like the United Nations may be strong, although not conclusive, evidence of statehood.[37] To gain entry to the United Nations, a state must apply to the Security Council, in which a nucleus of powers - the United States, Great Britain, France, Russia and China - have the right of veto. A Security Council recommendation must also be passed by the General Assembly (not necessarily by consensus vote).

All new states agree to be bound by the principles of the UN Charter, which is analogous to a global peace treaty.[38] In so doing, states also agree to be bound by the rules of international law via links with the UN Security Council (Article 25) and the International Court of Justice (Article 93.1). There are now about 185 states which are recognised by, and are members of, the United Nations.

This study does not directly address the efficacy of the United Nations. At certain times there has been profound criticism about the behaviour of the UN with regard to particular incidents: the Gulf War and the Somali and Bosnian crises are recent events which come to mind. Each critique invokes strong views about the fundamental role and operation of the UN – an institution with processes far from perfect. What is important to note is that the UN provides a substantive and procedural foundation which acts as a forum for active international discourse; how some states use or abuse this opportunity is not so much the issue here, as how the existence of the UN has helped to facilitate, among other things, the rapid growth of international environmental law in response to the carousel of environmental crises discussed earlier.

During the decades of the 1970s, 80s and 90s, some important UN-sponsored or UN-legitimated gatherings made their mark on present day ecological awareness and the progressive development of international environmental law. Viewed individually there is little to distinguish one above the others; but viewed as a collective history of environmental perceptions, each has merit as it builds upon the work of forerunners, exposing inadequacies, demonstrating new concerns and postulating new directions. A selection of these gatherings is presented below, to illustrate the primary role of the United Nations in assisting in national environmental management; in helping to frame modern environmental perceptions; and in facilitating global environmental law.

The 1972 UN Conference on the Human Environment

The 1972 Conference on the Human Environment in Stockholm was an initiative of the United Nations in response to their perceived need for the coordination of previously fragmented and spasmodic efforts at environmental protection (Nanda 1983:411). The Stockholm Conference discredited the fallacies of the infinite nature of resources and the indestructible carrying capacity of the global ecosystem. It also exposed the fundamental inequities between developed and developing countries with regard to the consequences of ecological problems.[39]

Two of the better known accomplishments of this Stockholm Conference are its Declaration on the Human Environment[40] and the creation of the UN Environment Programme (UNEP) in 1973.

- **The Stockholm Declaration**

The Stockholm Declaration expressed guiding principles and general international obligations which now form the intellectual foundations of international environmental

law. In particular two principles of the Declaration emerge as being fundamental to global ecosystem integrity. The first is Principle 1:

> Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial or other forms of oppression and foreign domination stand condemned and must be eliminated.

Principle 1 espouses two kinds of equality: individual and state. Furthermore, it implies that humankind cannot sustain itself unless it acknowledges and respects the interconnectedness between all elements of the global ecosystem and the interdisciplinary nature of life's order. This necessitates both the political will and imagination to think and act holistically in the pursuit of social order as opposed to anarchy.

Principle 21 is a fundamental tenet of international environmental law:

> States have, in accordance with the Charter of the United Nations and the principle of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 21 represents the dual agenda of sovereignty - internal and external - and of the corresponding rights and obligations on a sovereign state: to satisfy its own needs without compromising the ability of other states to satisfy theirs (Haas & Sundgren 1993:407).

Although Principle 21 is merely a statement reflecting the general opinion of the time, this study will develop the argument that it is a profound and fundamental doctrine which critically challenges traditional approaches to sovereignty in the context of responsibility for the global ecosystem.

- **The UN Environment Programme**

UNEP, established one year after the Stockholm Conference, is an intergovernmental organization operating at both the international and national levels, to assist in the creation of international agreements, guidelines, principles and standards.[41] Its three main objectives are:

- to facilitate international cooperation in all matters affecting the human environment;

- to ensure that environmental problems of wide international significance receive appropriate governmental consideration; and
- to promote the acquisition, assessment and exchange of environmental knowledge.

UNEP lacks any formal executive powers. It can, and does, advise and direct states, but it can neither make binding decisions nor coerce states into accepting its principles. UNEP acts alongside the FAO, WHO, WMO, IMO and UNESCO, all of which are under the aegis of ECOSOC and the UN General Assembly (Palmer 1992:261).

UNEP was constituted to, *inter alia*, further promote the development of international environmental law (UNEP 1978). To this end it conducted an in-depth review of environmental law in 1981, resulting in a programme for the development and periodic review of environmental law.[42] Known as the Montivideo Programme, this review mechanism involved a range of other specialised UN organs, UNEP units and regional and non-governmental organisations such as the International Union for the Conservation of Nature and Natural Resources (IUCN).

UNEP has also been involved in the formulation of a range of international environmental agreements. In the context of the polar regions, the most salient accords are the Convention on International Trade in Endangered Species of Wild Fauna and Flora;[43] the Vienna Convention for the Protection of the Ozone Layer, its Montreal Protocol on Substances that Deplete the Ozone Layer plus its Helsinki Declaration and London Amendments described above; and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.[44]

The establishment of UNEP reflects the '...catalytic and coordinating role...' the Stockholm Conference obviously sought in an environmental agency.[45] Through its project work, UNEP was instrumental in informing the global community of states about, among other things, the threat of artificially induced, irreversible climate change. As discussed above, this is undoubtedly one of the most important environmental situations of our generation, and an issue which has strong cause/effect links with the polar regions. While UNEP has been considered reasonably successful in its assessment role, it has been criticized as being less than effective in terms of operationalizing management plans to deal with the environmental problems it exposed. This has been thought due to a lack of both political will and adequate resources at the level of the state (Thacher 1992:187-8).

The nexus between the environment and development (or lack of it) was first explored in the Founex Report – prepared for the Stockholm Conference.[46] The notion that this

environment/development relationship was fundamental to basic human needs was further elaborated in the UNEP/IUCN/WWF World Conservation Strategy, which was endorsed by the UN General Assembly in 1980 (Thacher 1992:189). Importantly the Strategy dealt with the notion of sustainability – the balance between over- and under-development which was to become the enduring principle emanating from the World Commission on Environment and Development of 1987.

The Brundtland Commission : From One Earth to One World

International reaction to environmental crises crystallized in 1987 and the World Commission on Environment and Development, which became known as the Brundtland Commission after its Chair, Gro Harlem Brundtland, was convened to develop a 'global agenda for change' (WCED 1990:xiii). Its brief was fourfold:

- to propose long-term strategies for sustainable development;
- to foster international ecosystem cooperation;
- to strengthen environmental concern and the efficacy of environmental action; and
- to develop a long-term agenda.

(WCED 1990:xiii)

In terms of its brief, the Brundtland Commission considered that the way to achieve a shared perception and common concern was through education, institutional development and law enforcement (WCED 1990:90). It noted that national boundaries had become so 'porous' that traditional political distinctions had become blurred. It further acknowledged that while traditional social systems recognized interdependence, on a broader scale the enforcement of common interest was often impeded because '...areas of political jurisdictions and areas of impact do not coincide' (WCED 1990:91). Therefore, in the absence of a supranational authority, common interest could only be articulated through international cooperation. This would be relatively simple if it was, in game-theory language, a win-win situation, but in dealing with environment and development questions, there were bound to be losers.

The Brundtland Commission pointed out that as each community strives to survive, some get the lion's share while others are destined to a life of '...hunger, squalor, disease and early death' (WCED 1990:71). Its strategic imperatives for change included, among others, major policy changes in all countries; the revival of growth in developing countries; the incorporation of non-economic variables in the notion of sustainability; changes in energy consumption patterns; the conservation and

enhancement of the natural resource base; and the reorientation of technology (WCED 1990:93-104).

The chief institutional challenge of the 1990s was thought to be the incorporation of ecological dimensions into the policy process. This would embrace six priority areas:

- getting at the sources;
- dealing with the effects;
- assessing global risks;
- making informed choices;
- providing the legal means; and
- investing in our future.

(WCED 1990:357-8)

Dedicated commitment would be required at the national, regional and international levels to achieve this agenda for sustainability. In view of the status of the United Nations as the only intergovernmental organization with universal membership, it was thought to be the logical forum for facilitating global institutional initiatives (WCED 1990:360).

The UN did, in fact, begin an important process towards this objective by addressing the issue of potential global climate change.

Global Climate as Common Heritage?

In 1988 at the 43rd UN General Assembly session, Malta proposed that global climate be conserved as part of the common heritage of mankind.[47] Malta's kudos after having successfully helped negotiate common heritage into the Law of the Sea Convention did not help in this instance as the UN did not accept Malta's rather grand proposal. Instead it passed a Resolution acknowledging that: '...climate change is a common concern of mankind, since climate is an essential condition which sustained life on earth.'[48] The legal significance of the phrase *common concern* was not spelt out and possibly no legal inference can be drawn from the use of the term in this Resolution (Birnie 1991:2).

Notwithstanding, the UNGA made a crucial contribution to the philosophy of global ecosystem integrity in the framing of this Resolution. More importantly perhaps was the Resolution's pragmatic entreaty to the scientific community to continue its research, and to the international political community to give climate change priority political status. In so doing, the UNGA endorsed the establishment of an

Intergovernmental Panel on Climate Change (IPCC), a joint initiative of the WMO and UNEP.[49] At the same time, in acknowledgment of the achievements of the Stockholm Conference, the UNGA directed that a Conference on Environment and Development be held in Rio de Janeiro in June 1992, to mark Stockholm's twentieth anniversary.

The UNCED : All Roads Lead to Rio

All of the information presented so far in this chapter had some part to play in the UN Conference on Environment and Development (UNCED). Concerns were first raised at the Biosphere Conference (described below at p.36) and later at the Stockholm Conference that population growth and poverty underpin the environmental aspects of unsustainable development, climate change threats and depletion of the natural resource base. These variables cannot be neatly categorised as independent of each other and the UNCED did not attempt to do this. Rather the UNCED process, which consisted of lengthy and intense preparatory fora[50] and the final session in Rio de Janeiro in June 1992, dealt with cross-sectoral issues, admitting that a '...new appreciation that environment and development are part of an indivisible whole...' had been reached.[51]

The UNCED process generated mountains of documentary evidence of its commitment to securing 'a global partnership for sustainable development' which became the catchcry of its blueprint for future action, contained in the document Agenda 21 (United Nations 1992:Preamble). Agenda 21 comprises 40 chapters on such seemingly diverse issues as desertification and the role of trade unions.[52] In addition to this blueprint, the UNCED produced a Declaration and a framework Climate Change Convention[53]; a Statement on Forest Principles; and a framework Biodiversity Convention (discussed earlier).

Importantly too, the UNCED developed a strategy for financing environmentally sound development programmes and projects. The Global Environment Facility (GEF), under the joint management of the World Bank, UNEP and UNDP, is to fund the incremental costs of global environmental protection which are additional to the costs incurred by states alone. This was intended to ensure that environmental protection provided global benefits above and beyond what a state could provide.[54]

The components of this blueprint were not so much the product of Rio as the substantive work of the preparatory fora. The negotiating texts were finalised at Rio in what amounted to little more than a symbolic forum for their signing. This fact did

not detract from either the inherent value of the Rio forum or of the documents themselves; it simply made good sense to negotiate the texts in more suitable circumstances.

Reporting the whole of the UNCED process and its outcomes is outside the scope of this study, consequently the years of negotiations, the interim statements and the last-minute posturing and recalcitrance in Rio are not dealt with here. What is important to note in the context of this study, is how the UNCED perceived itself and the general principles which the UNCED contributed to the notion of states taking responsibility for the global ecosystem.

The preambular chapter of Agenda 21 states that this blueprint for the 21st century:

> ...reflects a global consensus and political commitment at the *highest* level of development and environment cooperation.

(United Nations 1992:1.3, emphasis added)

There is speculation that such statements are simply gloss and there has been criticism from non-governmental organisations concerning what they saw as *manufactured* consensus in these final documents.[55] This criticism is no doubt true, as international agreements almost always contain elements of manufactured consensus; without such trade-offs, final accord may never be reached. However there is little doubt, despite the criticism it has attracted, that the UNCED process can be considered legitimate and representative by virtue of the quality and quantity of attendance; by the generally encouraging language of the Rio documents; and by the common acceptance of the process by the international community.

It was stated elsewhere in the Agenda 21 Preamble that:

> ...integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own; but together we can - in a global partnership for sustainable development.

(United Nations 1992:1.1)

The global partnership concept is the cornerstone of this study. It implies that international cooperation is an essential ingredient in the solution to global environment problems, which, as a new class of problems, are difficult to handle within the traditional norms and practices of state sovereignty (Haas & Sundgren 1993:402).

Criticism of a more profound nature has been articulated by scholars who question the practicality of the UNCED's global partnership concept. Some see the maintenance of economic growth and national security as incompatible with a global partnership (Keohane et al 1993:3-4). This is precisely the kind of attitude investigated in this study. As Keohane *et al* rightly note, there have been many successful examples of international cooperation on such issues as cholera, slavery and atmospheric testing of nuclear weapons, all of which relied on effective international cooperation, institutions and law (Keohane et al 1993:4-5). However, whether states have the ability and more importantly, the will to re-examine their attitudes, actions and relationships with each other, empowering themselves to deal effectively with global environmental issues under traditional interpretations of state sovereignty, is debatable. Keohane *et al* consider that as world government is not around the corner: '...organised international responses to shared environmental problems will occur through cooperation among states, not through the imposition of government over them' (Keohane et al 1993:4). The degree of cooperation will depend in some measure on the ability of the scientific and environmental communities to induce or scare states into collective action. What the UNCED did was to put the cards on the table, as the first step.

In summary, the new agenda entails a global partnership for sustainable development and acknowledges that its successful implementation is first and foremost the responsibility of governments (United Nations 1992:Preamble). Such anodyne phrases were perhaps designed in part to evoke a healthy ecological conscience in the state officials attending Rio, and at best may only be actionable if states have the capacity and the will, along with cohesive ecological ethics, to execute this blueprint.

The emergence of this new global environment agenda articulated through the UNCED process has not occurred in isolation. Rather it has been part of a gradual shift in the political, economic and social orders since the end of World War II.[56] One of the best illustrations of the scope of this shift can be found in the topic areas covered by the agenda of the UNCED.[57] One complete Chapter in Agenda 21 (Chapter 35) is devoted to science, specifically the role and use of science in supporting the UNCED principles. Scientists have often been leaders in the field of international cooperation and are thus accorded the status of key actors in the process of the evolution of responsibility for the global ecosystem.

1.2.3 Scientific Communities

The imperative to re-examine traditional notions of sovereignty, in the context of international cooperation in the field of the environment, is based primarily on six

variables which help to define and clarify the origins, nature and potential remedies for environmental problems:

- advanced scientific knowledge;
- visible physical damage to vulnerable ecosystems;
- risks to human health and welfare;
- the general inadequacy of global environmental law, especially with regard to enforcement and liability;
- economic factors such as the North/South debate, destruction of traditional markets and industrial imperatives to pollute; and
- the political ramifications of a new world order.[58]

Of these, the first three are science-related.

Science is a dichotomy: it exists to serve humans and it exists in its own right as a body of knowledge. There is often an uninformed scepticism towards scientists by non-scientists: scientists developed nuclear devices but then acquainted us with the dangers in using them; scientists developed CFCs but told us their use was causing damage to our protective ozone layer. The words of Karl Popper epitomise the dilemma of science: '...scientific theory has to survive a detailed confrontation with experience' (in Magee 1975:30).

In the context of this study it is reasonable to conclude that scientists have partly contributed to environmental problems by inventing the technology and the means for humanity to behave in ecosystem-unfriendly ways. The paradox is that we then call upon the scientific community to provide instant expertise and definite answers towards solving the problems (Underdal 1989:254-6). Scientists defend themselves by arguing that they only make discoveries; they do not tell us how to use them wisely. This is a convoluted argument that takes us nowhere. The international community owes an enormous debt of gratitude to scientists: their discoveries are so pervasive in modern society as to be unquestionably taken for granted – most of the time. Just occasionally humanity does have misgivings about scientific ethics and standards and seeks to extract a certitude of assurance which cannot possibly be forthcoming. This is one of the great myths of science. To quote Popper again: 'No theory could ever be relied upon to be the final truth. It is still replaceable by a *better* theory' (Magee 1975:29).

Many social science papers which provide commentary on the politics of the environment do not deal adequately with the input from scientific communities. There are given variables that reports from state-run scientific institutions inform government

policy, and that these high-level policy-makers also operate within the international realm. But often little formal credibility is given to the work which goes on behind the scenes. This study considers that the global scientific community is a key actor in environmental politics because it provides the fundamental information upon which policies, and ultimately laws, are based. It may also provide a new perspective on the place of humanity in the global order:

> From space, we see a small and fragile ball dominated not by human activity and edifice but by a pattern of clouds, oceans, greenery, and soils.

(WCED 1990:1)

Science can, and does, contribute to resolving environmental conflicts in many ways, for instance:

- by describing what the system is composed of;
- by analysing and diagnosing its present condition;
- by predicting the capability of the system to support various functions proposed or to regenerate itself;
- by prescribing requirements to maintain the system within acceptable limits; and
- by providing advice on formulating management activities.

(Cullen 1990)

Scientists who support the basic tenet of science: that evidence cannot be falsified or ignored if it does not suit the prevailing hypothesis, should theoretically be in a more neutral position than politicians or bureaucrats when it comes to presenting the *truth* (Cullen 1990:7). While many elements of environmental problem-solving go beyond the realm of science, providing accurate and honest information about a situation is one crucial factor in policy choice.[59] However, not all scientific information will be well-received, nor will it have a critical impact on policy. The table below indicates likely conditions which may affect the impact of scientific input into the policy process:

Impact likely to be	
Strong	**Weak**
'Definite' or at least consensual conclusion	Tentative or contested hypothesis
Feasible 'cure' available	'Cure' unclear or not feasible
Effects close in time and (social) space	Effects remote
Problem affecting 'social centre' of society	Problem affecting 'periphery' only
Problem developing rapidly and surprisingly	Problem developing slowly and according to expectations
Effects experienced by or at least visible to the public	Effects not yet experienced by or visible to the public
Political conflict: low	Political conflict: high
Issue linkage: none, or on substantive merits only	Tactical issue linkage; issue 'contamination'
Institutionalized setting, interactive decision-making	Not institutionalized, *ad hoc* decision-making

Figure 1. Conditions Affecting the Impact of Scientific Input
(Source: Underdal 1989:259)

The growth in consensual knowledge about environmental problems, visible effects and likely cures have helped to strengthen the position of scientific input into the new global environmental agenda. In many cases, however, political conflict has been high and the issues have been contaminated by tactical questions which have served to delay or diffuse the process. The benchmark conferences mentioned below illustrate in general terms the role of the scientific community in helping to define the new agenda. The conferences chosen are mainly concerned with global climate because it is this issue which has direct relevance to the polar regions. Many other international organizations such as the International Maritime Organization and the World Health Organization which deal with the social, economic and political consequences of other scientific issues were also active at the same time. Their agendas, however, are of only marginal relevance to this study.

The Biosphere Conference

A little-known Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Resources of the Biosphere (the Biosphere Conference)[60] held in Paris in 1968, helped to bring environmental issues into the international and political arenas.

The Biosphere Conference was a scientific forum which discussed the impact of humanity on the biosphere. It acknowledged public concern and calls for corrective action, implying that critical thresholds had already been reached with regard to some ecological problems.[61]

The Biosphere Conference was the birthplace of the international Man and the Biosphere (MAB) project, launched in 1971.

First World Climate Conference

In 1979 the World Meteorological Organisation (WMO), concerned about humanity's influences on climate, convened the First World Climate Conference in Geneva. In comparison to the Stockholm Conference's more generic environmental agenda, the First World Climate Conference was a benchmark attempt at incorporating low-level politics into the scientific debate about potential climate change (Lunde 1992:66-7).

The First World Climate Conference discovered that a vast number of scientists were significantly concerned about potential anthropogenic impact to take up global climate research. Irrespective of the uncertainty of their state of knowledge, the scientists spelt out a warning in the Conference Declaration:

> The present understanding of climate processes leads us to recognise the clear possibility that [these] increases in CO_2 may result in significant and possibly major long-term changes of global-scale climate.

(Lunde 1992:68)

This was clearly a message meant for the policy- and law-makers. Although the links between human behaviour and climate change were becoming more apparent with increasing scientific knowledge, the magnitude was still uncertain however, and scientific consensus, absent.

One month after the First World Climate Conference, the 8th World Meteorological Congress adopted the World Climate Research Programme. This Programme invited participation by both the UNEP and the International Council of Scientific Unions, among others, and promised to provide a new international forum for discourse on climate studies (Lunde 1992:67).

Villach Conference on Greenhouse Gases

In 1985 the International Council of Scientific Unions, the World Meteorological Organization and the UN Environment Programme organised a scientific conference

on greenhouse gases in Villach, Austria. This represented a major workshop on 'the assessment of the role of carbon dioxide and other greenhouse gases in climate variations and associated impacts', which was the Conference title. The results of six major assessments in this field, carried out between 1980 and 1985, were systematically compared to reveal the present state of knowledge (Lunde 1992:71).

The importance of the Villach Conference lies in both its acknowledgment of the international import of potential climate change and in its claim that an international cooperative effort would possibly serve as the basis for a future plan of action (Lunde 1992:73). Importantly, agreement on the effect of increased CO_2 became more evident:

> ...a doubling of the CO_2 concentration would lead to an increase in the globally averaged surface temperature by 1.5 to 5.5°C. The uncertainty is considerable, but there is almost unanimous agreement that a substantial warming would occur...

(quoted in Lunde 1992:73)

The climate change issue appeared to be changing focus. The cause and effect dichotomy was becoming clearer, but what was troubling scientists was the timeframe. As explained earlier, climate change is a natural phenomena occurring over hundreds, thousands and millions of years. However, this *normal* rate was apparently being accelerated to, as one WMO report phrased it: '...within the lifetime of a single member of the human species.'[62] This temporal dimension was popularly perceived as one qualifying variable between *natural* and *enhanced* climate variability. But it certainly was not the only one; for example the dust clouds from major volcanic eruptions may also have a profound effect on the rate of change in the natural sense.[63]

The Intergovernmental Panel on Climate Change (IPCC)

The IPCC was established by the UN in 1988, following Malta's proposal for global climate to be considered the common heritage of mankind. Its brief included the tasks of:

i) assessing the scientific information that is related to the various components of the climate change issue, such as emissions of major greenhouse gases and modification of the Earth's radiation balance resulting therefrom, and that needed to enable the environmental and socio-economic consequences of climate change to be evaluated; and

ii) formulating realistic response strategies for the management of the climate change issue.

Accordingly, three working groups and one special committee were established, to:

1 assess available scientific information on climate change;

2 assess environmental and socio-economic impacts of climate change;

3 formulate response strategies; and

4 promote full participation of developing countries in its activities.

(WMO/UNEP 1990:Preface)

Part of the mandate of the IPCC was also to discern the likely contents of a possible future international convention on climate.[64]

The 44th UNGA in 1989 agreed, as a matter of urgency, on the need to prepare a framework convention on climate change. One year later, the 45th UNGA agreed on a single intergovernmental process - the Intergovernmental Negotiating Committee - to draft the framework convention (UN Res.45/212).

The IPCC's interim reports from its Working Groups were completed in August 1990. Lunde's assessment was that over one thousand scientists were engaged in this two year review process, making it the most concerted scientific effort in contemporary history (Lunde 1992:78-9). The IPCC process has been lauded as an integrated, internationally cooperative forum for dealing with the potential of artificially-induced, irreversible global climate change.[65]

An updated scientific assessment was issued in 1992 prior to the Rio Earth Summit (WMO/UNEP 1992). A further update was drafted in May 1994 and is due for release shortly.[66]

In conclusion, throughout the past several decades there has emerged a growing interest in and concern about the global environment by the scientific community. Consensus has been developing slowly about the nature of the problems and their likely causes and effects and this has helped to validate the impact of scientific input in the policy process. However from the perspective of an outsider it is impossible to know how much of the scientific information which is readily accessible in the public domain is the product of bias. Bias, in this sense, implies that scientists may have been paid to find evidence to support the particular policy position of a vested interest.[67] For every socially responsible scientist, there may be another whose research direction is conditioned by his/her working environment. The bias may only

become apparent when it is discovered who is actually using scientific results and for what purpose. Notwithstanding, these benchmark conferences have had the effect of both bringing to the fore scientific concern over environmental issues and helping to stimulate the law-making process. Environmentalists are one group which have used science both to bolster their own credibility and to give weight to their campaigns.[68]

1.2.4 The Global Environmental Movement

The new global environmental agenda has evolved from a primitive state of intuitive knowledge about our living environment and is due in some measure to the mobilization of the information-gathering and disseminating environmental movement.[69]

For the sake of expediency this study concerns itself primarily with selective accounts during the three decades following the publication of Rachel Carson's Silent Spring in 1962. That period witnessed a dramatic upsurge in both thinking about our environment and framing an agenda for future action.

The 1962 book Silent Spring contained a stinging indictment of United States chemical companies for their irresponsible promotion of chemical biocides ('killers of life') in agriculture without adequate '...advance investigation of their effect on soil, water, wildlife and man himself' (Carson 1962:13). Silent Spring struck a chord in those with an environmental conscience because it highlighted the potentially serious ecosystem consequences (like the cumulative effects of toxins and by-product deaths of non-target species) of previously *acceptable* behaviour.[70] Carson, a Master of Biology and a naturalist, was vilified by her critics - the US Department of Agriculture and some of the industries she indicted - who questioned both her professional ability and her warnings, considering them more science *fiction* than scientific *prediction*.[71] Regardless of the criticism, which persists to this day, Silent Spring succeeded in putting Carson's particular ecological perspective and, more importantly, the whole question of environmental ethics, onto the public policy agenda.

The global environmental movement began to take on its modern shape from the 1960s, although an ecological conscience of sorts had been known for centuries.[72] By the 1970s a mass movement of environmentalists was sweeping the western industrialised world. This mass action had two features which distinguished it from earlier conservation movements. It was noted to have '...a broader conception of the place of man in the biosphere, a more sophisticated

understanding of that relationship, and a note of crisis...'. The second feature was its more 'direct political impact' (McCormick 1989:48).

Accordingly, the new environmentalists travelled a more anticipatory, holistic road than their predecessors, seeing the principle of scientific certainty as being less important than evidence beyond reasonable doubt. Furthermore, as a social and political action, new environmentalism became inherently universal.[73] The era was also one of an unprecedented public display of frustration and displeasure with the establishment and reigning social and political values, thereby embroiling other more domestic factors into the global debate.

A total of 400 non-governmental organisations were officially represented at the 1972 Stockholm Conference on the Human Environment, thereby promoting the role of NGOs and their value in the global communication of environmental interests and concerns. Although their participation at Stockholm was strictly limited to observance, the post-Stockholm era spawned a rebirth of interest in the NGO movement (McCormick 1989:101).

There was no Martin Luther King of this new environmentalism. Instead there was a steady stream of *prophets of doom.* commentators like Paul Ehrlich, Barry Commoner, Garret Hardin, and works such as the Limits to Growth and A Blueprint for Survival generated enormous interest and debate.[74] Out from beneath the doomsday treatises came a fountain of environmental groups, and both Friends of the Earth (FoE) and Greenpeace were two such products of the post-Silent Spring era of ecological awareness.[75] There have been times of great acrimony between FoE and Greenpeace, reflecting their differing operational structures and executive preferences. Notwithstanding, their role in the process of disseminating information in the international community is without question.

New environmental facilitators like the European Environmental Bureau and environmentally-based political parties also sprang up during this time (McCormick 1989:101-143). New Zealand was the first state to have a *green* political party - the Values Party, founded in 1972. Throughout the 1970s and 1980s many European countries also witnessed the formation of such political groups. In the 1990s, green politicians operate in all tiers of government in most democratic assemblies of the world. Their existence implies neither success nor wide public acceptance of their policies, however (Caldwell 1990:87).

While the ideologies, objectives and methods of the environmental advocacy are sometimes diverse, their ultimate goals have often converged. One common aim of

note is the desire for a sustainable economy of high environmental quality (Caldwell 1990:86). One commentator sees the global environmental movement as bringing about three fundamental changes in human values:

- acknowledgment of the dependence of humanity on a healthy natural environment;
- a readjustment to the legacy of technology; and
- a challenge to orthodox models of economic growth.

(McCormick 1989:194-5)

Perhaps the greatest achievement of the environmental movement was to ensure that: '...the relationship between humans and their environment will never be quite the same again' (McCormick 1989:203). FoE put it somewhat differently: 'If you're not part of the solution, you're part of the problem' (FoE 1972:166).

In terms of western politics in general and polar politics in particular, ecological advocates have become legitimate actors in international relations, although the confusion and lack of cohesion regarding their ethics remains troublesome (Caldwell 1990:Ch.5). Notwithstanding, their ability to widely condition social beliefs has led to a degree of influence over political discourse (at all levels of government), priority- and agenda-setting and sometimes ultimately state behaviour.[76]

Contradictions still exist though, between the *social* perspective of ecological questions and the *political* viewpoint. This is due in some measure to the incongruity of power between the two forces, and also to the salience of the issue to immediate lifestyle values (Caldwell 1990:88). Before states choose, or are forced to take the committed step of further yielding elements of their sovereignty in favour of the common good, there are several procedural stages which emerge. One is the gathering and assessment of information crucial to determining the level of knowledge necessary to make informed decisions. The second stage is a further expansion of the international consultative process to identify who the actors are, what their interests are, and sources of potential conflicts and choices.[77] Brown argues that because the results of the expanded consultative process are sometimes legal instruments, and states are aware that such instruments may further erode their sovereign autonomy, the process of gathering information, consulting and negotiating will be gradual and voluntary. This is particularly pertinent since international law seeks voluntary enforcement and compliance (Brown 1992:100). This pattern does, in fact, typify the development of international environmental law through the international policy process.

The above contextual background is evidence of the underlying features of state responsibility for the global ecosystem, and explains not only some reasons why a new environmental agenda has evolved but also why a shift in focus was necessary. From this discussion certain conclusions can be drawn about the modern world order. The first is that while all states are independent and equal, they have a responsibility to acknowledge both the independence and equality of all other states. Therefore, while they have sovereignty over resources within their jurisdiction, they cannot use those resources in such a way as to jeopardise the ability of coexisting states to use theirs. To do so would be to place in danger the integrity of other states. This is the doctrine of state responsibility: all rights of an international character involve international responsibility (Dixon & McCorquodale 1991:400). Secondly, the balance of scientific evidence indicates that when environmental harm occurs, it can have one or more consequences: i) it can affect only an area within a sovereign state; ii) it can affect neighbouring areas contained within the borders of neighbouring states; or iii) it can have affects which range far wider, possibly globally. The third conclusion is, therefore, that there are several levels of competence at which actions could be taken to mitigate harm: i) at the level of the individual state; ii) at the level of two or more states; or iii) at a level which transcends the competence of sovereign states and implies a global solution.

Responsibility for the global ecosystem thus represents the third tier of both harm and competence to act. It arises when the level of harm (or potential harm) and the ability to manage that harm are beyond the ability and the jurisdiction of a small number of sovereign states. Evidence of responsibility for the global ecosystem is found in international environmental law and in the corresponding domestic laws of states.

There are several crucial elements to be evaluated here. The first is the more detailed composition of this notion of responsibility for the global ecosystem. The so-called new global environmental agenda and the corresponding level of responsibility it entails rests on five key concepts and principles which are now, or may become, central defining elements of responsibility in the 21st century. These concepts and principles are evaluated below. The second crucial element is the selection of criteria which can be used to measure levels of responsibility. These have been determined as legitimacy, effectiveness and accountability and they will also be evaluated below. The third crucial element is the relevance of this analytical perspective to the polar regions, discussion on which forms the concluding sections of this Chapter.

1.3 Key Concepts and Principles of Responsibility

As an ethical and practical response to environmental issues of global relevance, state responsibility for the global ecosystem is, at this stage, immature and incomplete. As it develops it may embody an amalgam of concepts and principles which have also evolved from the past three decades of environmentalism since the publication of Silent Spring. Issues like the polluter pays principle, sustainable development, the common heritage of mankind, intergenerational equity, and the precautionary principle are likely to figure more prominently in state policy- and law-making in the future. All of these seek to arouse in the key actors a practical, holistic, temporal or anticipatory approach to environmental issues and multilateral cooperation.

It is uncertain what future role such concepts and principles will actually play in international environmental law as they are often abstract in their definitions and hence ambiguous in terms of interpretation. Notwithstanding, each merits a short discussion here, to lay the foundation for the remainder of the study.

1.3.1 Polluter Pays Principle

The notion that a polluter should be held accountable is three-dimensional. The first perspective concerns economics and can be found in the formal proposal of the Organization for Economic Cooperation and Development (OECD) made in 1972.[78] In this context, the 'polluter pays principle' was described as:

> The principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment...

(OECD 1975:12).

The original intention of the OECD was that the polluter should bear the cost of pollution prevention and control measures primarily in order to: i) ensure that the environment remained in an acceptable state; and ii) to internalize costs so that significant distortions in international trade and investment were not created (Gaines 1991:468).

The second dimension is a legal one which rests on the assumption that polluters should be made *liable* for their actions. It originates from the OECD's 1972 proposition, but is not found within it. The OECD's notion concerned allocation of

the costs of *prevention* and *control* of pollution, rather than - as is more commonly accepted today - a mechanism to ascribe liability.

What has happened in international environmental law is that the premise of the polluter being held *liable* has developed over time and in such a manner that the 'polluter pays' tag has been applied to it in modern times, along with a meaning which goes beyond the original OECD proposition. The 1941 Trail Smelter Arbitration is one well-known example of the principle of polluter liability which became well-entrenched in environmental law long before the OECD's 'polluter pays principle' was articulated.[79]

In this Case, a smelter located at Trail in British Columbia, Canada, emitted into the atmosphere sulphur dioxide which subsequently damaged land in Washington State, US. Canada did not dispute liability for the smelter's pollution and agreed to the payment of compensation. The Arbitral Tribunal requested that Canada ensure the Smelter enacted abatement measures to control the pollution. Importantly it also found that :

> ...under the principles of international law, as well as of the law of the United States, no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the property or persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence.

(Dixon & McCorquodale 1991:453)

Thus the polluter pays principle is both an economic principle and has expanded into a mechanism for liability as well. It has found favour as a regional political and economic solution to the problem of pollution, particularly in the United States. In the international realm too, a form of polluter pays principle is embodied in such instruments as the International Maritime Organization's International Oil Pollution Compensation Fund (Birnie 1992:80) and the Commission of the European Communities' 1991 Amended Directive on Civil Liability for Damage Caused by Waste.[80]

However, there are operational difficulties with this concept, not the least of which are finding the burden of proof (for instance, who is responsible for the pollution from motor vehicles: the fuel producers, the vehicle manufacturers, the drivers?); how to account for cumulative effects; when and how to bring instruments for implementing the principle into play (for example, at the level of processing and product standards, individual regulations and prohibitions, fees and fines?); and who is responsible for designing, implementing and monitoring regulations? Perhaps one of the greatest problems with the polluter pays principle is in determining whether the costs should be internalized or should be borne by the community which desires such controls (OECD 1975:68-9).

Notwithstanding, the concept that the polluter and not the community should be held accountable is a key concept in environmental management at a regional level and one which doubtless has some practical application in the international realm. This is because there is a certain moral validity to the notion, which is its third dimension.

1.3.2 Sustainable Development

In 1987 the World Commission on Environment and Development saw the challenge of reconciling human affairs with natural laws as being conditional upon decisive political action to '...begin managing environmental resources to ensure both sustainable human progress and human survival' (WCED 1990:1). This translates to the concept of *sustainable development.*

The Brundtland Commission's formal definition of sustainable development is:

> [development that] meets the needs of the present without compromising the ability of future generations to meet their own needs.

(WCED 1990:8)

No single term has ever had to carry such a burden as this and it remains one of the most abused and misunderstood concepts in today's environmental vocabulary. Further consideration of the WCED's original definition has eliminated some of its ambiguity [81] and UNEP's 1989 definition is interesting in the context of this study:

> Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs and does not imply in any way encroachment upon national sovereignty.[82]

The IUCN/UNEP/WWF Strategy for Sustainable Living has since re-defined sustainable development as:

> ...improving the quality of human life while living within the carrying capacity of supporting ecosystems.

(IUCN/UNEP/WWF 1991:10)

This latter definition, while essentially anthropocentric, is adopted by this study because it does acknowledge ecosystems as being crucial to human survival. Furthermore it does not make state sovereignty inviolable and thus a qualifying variable in sustainable development. It is acceptable too because it circumvents what would otherwise be an exceedingly cumbersome exercise in trying to devise a better definition.

Despite the ambiguity and confusion over the concept of sustainable development, the merit of having ethical regard for the global ecosystem and for future generations has become the catchcry of some holistic environmental thinkers, due largely to this original proposition by the World Commission on Environment and Development.

1.3.3 Common Heritage of Mankind

The *common heritage of mankind* principle is to politico-legal theory what sustainable development is to the contemporary environmental vocabulary. The common heritage concept originated during the UN Law of the Sea negotiations in 1967, when Maltese Ambassador Pardo successfully appealed for the deep sea bed, beyond areas of national jurisdiction, to be considered the *common heritage of mankind.*[83] In this

context, Ambassador Pardo is interpreted to have meant that the deep sea bed should not be owned by anyone; management and benefits should be shared; it should be used exclusively for peaceful purposes; and the deep sea bed should be conserved for mankind, including future generations.[84]

Like other buzz words and phrases, common heritage tends to be used indiscriminately and inappropriately (Burton 1979:502). This principle has been encoded into the UN Convention on the Law of the Sea (LOSC Preamble) where it refers to the deep sea bed beyond national jurisdiction. LOSC came into force on 16 November 1994 following deposit of the 60th instrument of ratification and the expiry of one year.[85] The entry into force of LOSC has thus given legal credibility to common heritage.[86]

A concept akin to common heritage is also conceptualized in both the Outer Space Treaty,[87] where outer space and the moon '...shall be the province of all mankind' and the Moon Treaty.[88] It is argued, however, that 'common heritage of mankind' does not have an unambiguous legal definition and may not stand independently of these various treaties which invoke it (Triggs 1986:280). Persistent usage and common interpretation may alter this perception in time and in any case, its so-called ambiguity does not detract from the philosophical merit of common heritage in discussions on the global commons.[89]

In 1989, a United Nations University project was mandated to provide 'a comprehensive insight into the increasing importance of the concept of *global commons* and its expression in international law' and the findings were subsequently reported by Edith Brown Weiss (1989). The common heritage of mankind was identified in Weiss' work as embracing the notion of conservation for mankind, including future generations, via an international regime of management. This is consistent with the findings of the Brundtland Commission, which also reported that the challenge of the future included that of 'safeguarding the interests of coming generations' (WCED 1990:x). Weiss thus introduced new terminology into an old theme, in the form of *intergenerational equity* (IG).

1.3.4 Intergenerational Equity

A *generation* represents an amorphous cycle of human life with no beginning and no ending. It existed yesterday, it exists today, and it will probably exist tomorrow, although no-one can be absolutely certain of this. Uncertainty in this instance is not a valid excuse for not acknowledging the potential for future generations to exist. While

intergenerational equity (IG) is perhaps the most logical of the philosophical concepts presented in this study, its form is still abstract and thus not readily definitive.[90]

The terminology - intergenerational equity - looks and sounds cumbersome, yet its meaning is really quite simple. Sustainability is the key. Humanity does have some rational, sustainable policies guiding its relationships with the natural system because it does acknowledge the *likelihood* of the existence of future generations. If this was not true, there would be no need for any environmental behavioural controls whatsoever.

The underlying principles of IG concern the *fairness* of the partnerships between past, present and future generations and *obligations* toward natural and cultural resources (Weiss 1989:49). Just how *fairness* is determined and by whom is not stated. Notwithstanding, IG suggests that each generation has a right to enjoy and use the planetary legacy, with a corresponding obligation to conserve those rights for the future. Hence some equity is passed on. These obligations are not only moral, but can be transformed into legally enforceable norms. According to Weiss, the notion of equity is central to the legal tradition (Weiss 1993:333).

Weiss argued that we have obligations not only to our own nationals, but to nationals of other countries, as well as to future generations. This *intra*-generational equity means that justice may be implemented across one generation as well as between them (Weiss 1989:21). Sceptics would have immediate problems with this, as they would see obligations as fundamentally moral concepts not readily transferable to normative legal frameworks. But Weiss substantiates her argument by stating that our obligations are to future generations as a *class*, and not simply as nationalities, because 'our planet is finite and we are becoming increasingly interdependent in using it' (Weiss 1989:27).

This notion is supported by the findings of the Brundtland Commission, which also reported that: '...traditional forms of national sovereignty are increasingly challenged by the realities of ecological and economic interdependence' (WCED 1990:261). Malnes concurs, but is more guarded: 'The mere possibility that future people won't exist does not justify a *total disregard* of their welfare' (Malnes 1990:25, emphasis added). Rather, he suggests that we have a duality of duties to both nationals and foreigners, spatially, and to present and future generations, temporally (Malnes 1990:21).

The middle ground of IG indicates that there is a *minimum* level of equity due between generations and across one generation. Weiss notes that this middle ground has deep

roots in International Law, citing as evidence the Preamble to the Universal Declaration of Human Rights:[91]

> ...recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world...

Weiss also lists many international covenants and charters which affirm the fundamental equality and dignity of all people, inferring that a minimum level of equity is due to all people.[92]

While these facets of IG may be constraining at best, or idealistic at worst, they are not prohibitive and could be considered compatible with the Brundtland Commission's notion of sustainable development. In order to fulfil intergenerational obligations to future generations, there is a need to step outside tradition and consider the whole of the planet, symbolically if not politically, as a global commons shared by each generation. Because much of what we do in the way of impacting on our planet impinges on others, it is no longer appropriate to consider the world simply in terms of regional political identities.

A further dimension is the fact that in order to protect our own environment for future generations, we must also participate in helping others to protect their environment, so that as near to total protection as possible is achieved, for all future generations. Herein lies the greatest obstacle to intergenerational equity; that of *intra*-generational equity, and specifically the role that wealthier countries must take in order to assist poorer countries fulfil their planetary obligations as well as to maintain access to their planetary rights. In fact, the UNCED process took up this challenge in its Agenda 21 blueprint for action, which was discussed earlier.

In summary, IG is operationalized by the application of the polluter pays principle, the common heritage of mankind concept and sustainable development. Each of these rest, in some measure, on our ability to act in a precautionary manner.

1.3.5 Precautionary Principle

Simply put, the precautionary principle may be construed to mean that:

> ...where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation before the threshold of risk is reached.

(Freestone 1991:21-39)

It has been shown that scientific understanding has been crucial in raising concerns about global environmental problems and stimulating the process of law-making through recommendations, benchmark conferences and reports. The precautionary principle is tangential to this scientific understanding. We readily accept the preventative aspect of medicine, for instance, and it would seem to make good sense to apply the same concept to the environment. However, there are two very important limitations with the precautionary approach: the variables of *scientific certainty* and identification of the appropriate *risk threshold.* Figure 1 (on page 36) indicated that the stronger the element of consensus, the more likely the scientific input is to have an impact in the policy process. The same is true for the identification of a risk threshold; if the scientific community can supply quantitative and qualitative data about risks to the system, such information is likely to be well-received. But taking this one step further, should the absence of strong scientific evidence be used to inhibit preventative policies?

The principle of precautionary action emerged during the North Sea Conferences in the 1980s. (The International Conference for the Protection of the North Sea was held in London in November 1987 and met again in the Hague in 1990 to determine issues regarding coastal state jurisdiction, habitats, species, fisheries and pollution from ships.) Although the principle has usually been framed in preambular statements and does not contain any qualifying statements on how scientific certainty or risk thresholds are to be measured or how they interact, its acknowledgment is now widespread. In fact, Freestone goes so far as to state that the acceptance of the precautionary principle is 'unequivocal' (Freestone 1991:25). This would seem true, in principle, as it is a component of various pieces of law including the UN Economic Commission for Europe's Bergen Declaration, the Bamako Convention[93] and the Bangkok Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific, among others (Freestone 1991). The Southern Ocean fishing regime, CCAMLR, would also seem, at first glance, to embrace the principle of precautionary action implicitly in its objectives and principles, but without the accompanying burden of the ambiguities in terminology like *scientific certainty* and *risk threshold.*[94]

The precautionary principle, *per se,* is an immature and emerging component of soft law with minimal treaty law application. While it, the polluter pays principle,

sustainable development, common heritage and IG all have considerable philosophical merit, they are not without operational problems. Thus there is room for scepticism and Birnie, for one, expresses her caution:

> It is doubtful…whether adoption of such futurological concepts…will enhance the existing methods of developing the necessary regulatory regime, although they clearly play political, publicizing, educative roles in raising public awareness and generating the debate that cranks the existing mechanisms into action.

(Birnie 1992:83)

Notwithstanding, the introduction and discussion of these new concepts and principles, of which more will be heard in the future, has already contributed both directly and indirectly to the new global environmental agenda and to the law-making process.

In combination, these five concepts and principles constitute the crucial elements in what this study calls *responsibility* for the global ecosystem. Someone must be held accountable for undesirable environmental activities: Principle 21 from the Stockholm Conference directs that states have the right to use the resources within their jurisdiction, providing that such use does not have unwanted transboundary effects. When effects cross state borders and have spatial consequences, or indeed threaten to cross generational borders and have temporal consequences, the situation may become unacceptable. This means that we need to be well-informed about how we can behave and still keep within the guidelines for acceptable practices. No longer can we afford to sit back and say that we are not certain of the consequences. While we procrastinate, further damage could be accumulating, until we reach beyond the point of no return. Then it may be too late; and even given that it may not be, are we prepared to take the chance? As custodians of planetary resources, aren't we morally obliged to conserve at the very least the global commons areas for all generations now and in the future? The major operational problem may be the lack of political will to embrace responsibility for the global ecosystem.

1.4 Re-Examining Traditional Approaches to Sovereignty

The evidence presented so far indicates that ecological interdependence and the heterogeneous nature of the state system are not necessarily compatible because effective international ecosystem management would require limits to be imposed on traditional applications of the principles of sovereignty. Birnie, in this context,

redefines a state's rights to autonomy by application of the prefixes *reasonable* or *responsible* to sovereignty (Birnie 1992:83). This might be construed to imply a less rigid approach than the traditional. After all, states comprise collections of individuals with the common objective of survival. But with a global society composed of diverse nations, states and ecosystems, this underlying common struggle becomes more problematic. The pursuit of survival, while establishing and perpetuating society as we presently know it, also places great strain on the planet as a whole because of the varying propensity of territorial ecosystems to both sustain their own inhabitants and their impact, and to absorb the impacts from neighbouring territories. As a consequence, the survival of the system of states which makes up the global political fabric has been challenged because the traditional perspective of the inviolability of state sovereignty is seen as an inhibiting factor in the development of a collective environmental conscience and effective multilateral or international ecosystem management. Does this then, imply world government?

1.4.1 World Government?

The idea of collective responsibility for environmental matters strikes at the heart of the pervasive condition of the anarchy of states and is thus a highly sensitive political issue (Hurrell & Kingsbury 1992:6). One scientist has argued that two important features of our post Cold-War world bear little relation to conventional politics, economics or military strategy. They are, that: '...no territory can support an indefinite increase either in its number of creatures or in consumption per creature, let alone both...' and further, that: '...all mainstream policies of all governments assume that, on the contrary, it can' (in Myers 1993a:13). To some degree we have been able to adapt to changing circumstances, but the transition is far from ideal or complete.

Some commentators today consider that traditional notions of sovereignty have been transcended by an interdependence which has *shrunk* the planet and made a world order based on territorial boundaries increasingly insignificant (McGrew 1992:66). But does this necessarily herald the imposition of a type of world governance, as opposed to the internationalization or globalization of specific issues like ecosystem management, which do not inherently lend themselves to unilateral state actions?

Hurrell and Kingsbury (1992) have identified five factors to help explain why world governance, particularly in the field of eco-management, has traditionally taken a back seat to the authority of the anarchic system of states. In the first place, they consider there is little or no evidence that world leaders and their populations either support a world government, or think it particularly desirable. For many people, the

achievement of a post-Colonial condition of statehood was hard-fought and they would have little desire to resubmit themselves to domination. Secondly, the autonomy and sovereignty of states have a 'moral validity' which deserves respect and might require protection from the power of a world authority. As Hurrell and Kingsbury observe, 'Once power is given over, it is not easy to limit it to a particular sphere' (1992:8). Their third inhibiting factor concerns the externalities and realities of the international order. They observe that world eco-management should be put into context and not into a vacuum. States have many roles in society, and eco-management is only one of them, albeit an important role. Fourth, there is little evidence to suggest that a supranational authority would be more effective than the practices that states, as the most empowered actors, could employ (Hurrell & Kingsbury 1992:8). The final, and perhaps most salient feature, is that the time it takes to reach agreement on the nature of any supranational authority may divert valuable resources away from the environmental problems themselves, as such negotiations are likely to be lengthy, perhaps causing conflict and the postponement of solutions while consensus is being reached. Paradoxically, the level of agreement necessary to produce a world authority may also indicate that the level of inter-state cooperation is high enough to effectively render the need for such a supranational seat of power largely redundant (Hurrell & Kingsbury 1992:8).

Hurrell and Kingsbury further observe that one alternative to world governance which has been suggested - that of the *decentralization* of authority involving the empowerment of local communities (as per Agenda 21) - also may not be viable when viewed in context. Some traditional practices of local communities, for instance, may *not* be compatible with rational eco-management (Hurrell & Kingsbury 1992:9). This is particularly so despite the expression of many anodyne sentiments to the contrary, and also since many modern values are essentially Western values and thus invite questions of their appropriateness to traditional behaviour. The whaling practices of northern Arctic communities is a case in point.

The decentralization argument also neglects the broader important functions of the state system in fields other than eco-management. The most obvious field to suffer from decentralization would be the global economic system, which Hurrell and Kingsbury thought would be thrown into chaos, causing enormous disruption and conflict. Finally, to sound the death-knell for the decentralization argument, they note that the increased numbers of communities, as opposed to the larger state unit, would become virtually unmanageable (Hurrell & Kingsbury 1992:9).

Hurrell & Kingsbury envisage, in the light of their preceding observations, that:
'...environmental issues will still of necessity be managed within the

constraints of a political system in which sovereign states play a major part...' while conceding that new forms of cooperation and further constraints on state sovereignty would emerge (Hurrell & Kingsbury 1992:9).

The modern historical period has witnessed the progressive globalization of human affairs, but caution should be exercised in expressing this because it implies neither cultural homogenization nor political integration. Globalization defines more complex issues concerning human interaction, interconnectedness and awareness (McGrew 1992:65). Globalization is '...a process through which events, decisions, and activities in one part of the world can come to have significant consequences for individuals and communities in quite distant parts of the globe' (McGrew 1992:65-6). Nowhere is the notion of globalization more salient than with regard to our common ecological interdependence.

The popular perception, shared by this author, is that states will endure but that they cannot act alone on matters of substantial importance to the global community of states, means that there needs to be an intermediary force between world government on the one hand and unilateral state action on the other. That intermediary force is the international regime.

1.4.2 International Regimes as Viable Alternatives?

A regime is 'a mode or system of rule or government' (Macquarie Dictionary 1981). As an entity, a regime generally arises to deal with interdependence and conflict in a specific issue area as part of a larger policy area (List & Rittberger 1992:90). In the literature, one theorist who recognises regimes as entities in the international order, describes them thus:

> ...*social institutions* governing the actions of those involved in specifiable activities or sets of activities...*practices* consisting of recognized roles linked together by clusters of *rules* or conventions governing relations among the occupants of these roles.

(Young 1989:12-13, emphasis added)

A regime as a *social institution* allows for the possibility that participation is not confined to states: sub-national, transnational or transgovernmental groups also may be *actors* (Tooze 1994:202).

Regimes have also been described as:

> ...*sets of implicit or explicit principles, norms, rules and decision-making procedures* around which actors' expectations converge in a given area of international relations.

(Krasner 1982:186, emphasis added)

Despite the variation in definitions,[95] generally there is a focus on *rules* and *norms*, and these may be useful tools in helping to explain the process and outcomes of international cooperation (Tooze 1994:202).

The central core of regime theory has been described thus:

> In conditions of international interdependence characterized by complex relations (multiple channels, multiple issues and the irrelevance of military power) and the consequent breakdown of the traditional distinction between international and domestic politics, the assumption that international relations are characterized by anarchy is no longer appropriate (if it ever was)...What has taken the place of anarchy is some form of international authority...The existence of authority is demonstrated by adherence to *regimes*.

(Tooze 1994:202)

International regimes can come in a variety of shapes and sizes. They can be simple: composed of just a couple of actors (principally states) seeking a solution to a common problem, or more complex: embracing international cooperation in solving a universal or substantial problem. Regimes, as defined above, generally comprise a group of stakeholders, the rules and practices they devise to deal with a specific situation, related behaviour and outcomes.

The establishment of a regime may be a reactive response to a given situation. In the environmental context, it can be, and often is, crisis-motivated (Boardman 1991:454). It can also be the product of a proactive vision, based on the probability of a problem emerging or being exacerbated unless collective action is taken or when the cumulative effects and risk spirals, or the *synergism* of environmental problems as Prins calls them, may not be amenable to traditional political treatment (Prins 1990:714-15).

Young has identified three principal means of regime formation. One is a *spontaneous* process, by which it is presumed he refers to such practices as custom, professionalism and accepted diplomatic behaviour.[96] The second method of regime formation, *negotiation*, is characterised by agreement, consent and formal expression of the results (Young 1989:86). Lastly, *imposed* arrangements, in Young's theory, involve the dominance of power (Young 1989:88).

Of these methods of regime formation, the one which appears to be more appropriate in the environmental context than the others is that of *negotiation*. This is because the spontaneous process may evolve over a long period of time which, in ecosystem

management terms, may not necessarily be desirable. Moreover, an imposed arrangement would necessarily involve the use of hegemonic force, which is of little practical value when *cooperation* is required. Negotiation, on the other hand, may be seen as analogous to the normal diplomatic processes of international cooperation.

Individual stakeholders involved in a process of regime negotiation will be driven by a range of motivations. Depending on the issue at hand, they may, for instance, be exercising power, promoting and protecting national interest, pursuing economic imperatives, demonstrating virtue and values or showing concern over the possible implications of their inaction. However, collective recognition of a problem does *not* necessarily imply collective agreement and commitment.

Taking the more benevolent form of argument, the reasons for negotiations aimed at the formation of a regime to solve a particular problem (assuming of course that the *problem* has been identified as a problem *per se*) may reflect the acceptance of a shared-interest in that problem which transcends unilateral action, either because one state is incapable of, or unable to, act alone, or because the cause and effect involves more than one state. This is particularly pertinent to eco-management, as ecosystems respect neither arbitrary political borders nor prevailing state interests. These factors require that the level of legitimacy of a regime be evaluated as part of any regime analysis.

The structure of a regime will necessarily depend on the nature of the problem and how the actors initially intend to deal with it. They will most likely employ conventional practices and precedent with regard to the making of rules of membership, decision-making, dispute resolution, liability and enforcement, flexibility, reporting and other procedural and substantive devices.[97] These are the kinds of variables which help in the analysis of the effectiveness of a regime.

Similarly, the outcome of regime formation will depend on the nature of the problem and the specific objectives of the group. An end product may be a free-standing treaty or other accord into which specific rules and regulations are embedded in order to give legal effect. Another outcome may be simply a statement of non-binding principles as the first phase of an on-going course of action – a blueprint for future action. The outcomes of regime formation, which this study focuses on, are another means by which the impact and likely effectiveness of a regime can be measured. Furthermore, the factors which help in the analysis of both legitimacy and effectiveness can also assist in measuring accountability, that is, the level of responsibility shown by the regime.

The diversity of models, of application and even of terminology among regime theorists is problematic to the researcher. Oran Young, one of the principal regime proponents, laments that '...the fundamental character of regimes remains elusive...' (Young 1989:12). Furthermore Young maintains that '...there is nothing approaching consensus on the role of regimes in international society' (Young 1989:12). The same appears to be true for the nature of regime formation. One problem is that actor behaviour may not always be predictable and may not always conform to traditional patterns because one issue will invoke a different set of state priorities and interests to another issue.[98] While general models in regime theory can be useful, Levy, for one, argues that some regimes may in fact be set up to *fail* by actors who intentionally wanted them to fail (Levy 1993:27). Theoretical regime models traditionally do not cover a contingency like this.

Not surprisingly, in view of the variation among regime theories and theorists, the question has been posed as to whether regimes actually matter at all. It has been suggested, for instance, that the regime concept is useless, if not misleading.[99] Much of the literature relating to international regimes deals with their formation and operation, but as illustrated above, the literature is unsatisfactory for a number of reasons, not the least of which is that it does not deal adequately with regime dynamics. Accordingly, this study is less concerned with the theoretical debate about regimes: international regimes *do* exist, they *do* facilitate collective action based on a common desire among concerned actors to solve a particular problem, and therefore they *do* matter. Although regime theories have been praised as being most appropriate where there is a 'specific and clearly defined regime' in operation (Tooze 1994:212) which is certainly the case in the Antarctic, it is most definitely inappropriate within the context of regime emergence in the Arctic. Therefore this work is more concerned with, in addition to regime dynamics, the way new regimes emerge, evolve and adapt through time. Accordingly it has been necessary to develop of hybrid template of analytical inquiry specifically with this objective in mind. This will be presented at point 1.5.

In conclusion, one could argue that the system of states has on the one hand served the people well, but in another sense failed them. Rapid population growth has led to many instances of environmental abuse, attended by severe poverty and devastation of primary resources such as air and water quality and species biodiversity. These characteristics have contributed to gross economic disparities, both within the populations of states and between states themselves. Economic disparities exist in natural terms, as some lands are more capable of sustaining human populations and resource exploitation than others. In addition, some cultures, religions and political ideologies are more amenable to the nuances of 20th century life than others. Natural

variability in the world order is, therefore, an accepted factor which has the function of stimulating the market forces of the institutions of world production and trade. But unnatural variability may cause extreme socio-economic hardship with consequences stretching far beyond the political borders of sovereign states. Some commentators today have acknowledged this in their re-examination of traditional approaches to sovereignty, particularly as it relates to environmental issues. How is this relevant to the polar regions?

1.5 Implications for the Polar Regions

The study so far has demonstrated the range of environmental rights and duties which attend to the sovereign state. It has also illustrated the current trend towards re-examining the meaning of sovereignty in the light of concerns about the state of the global environment. Sovereign states are being asked to impose further limitations upon themselves in the pursuit of ecosystem management in a rather more egalitarian manner than ever before. In this sense the Arctic can almost be considered a microcosm of the world.

The sovereign Arctic states, which have many similarities and differences between them, have been faced by the prospect of environmental calamities which could engulf them all. Some are perpetrators, some simply victims. All, however, may be implicated.[100] How they envisage dealing with their problems may provide useful extrapolations to the global environmental macrocosm.

Furthermore, the Antarctic provides a useful counterpoint to the Arctic scenario. Here, sovereignty has been given a different treatment within the aegis of the Antarctic Treaty System. While the states which form the management coalition under the System are sovereign, they have, by virtue of their participation in the Antarctic Treaty regime, accepted self-imposed restrictions upon their behaviour, pursuant to the spirit and intent of that Treaty. Yet superficially at least, both polar regions are striving for the same goal: that of ecosystem management.

Central to the thesis is the argument that the polar areas can be considered at once both *regional* and *international* areas of interest. They are largely self-determined regions (by virtue of their climate) composed of or managed by states and state processes; at the same time they are of considerable international significance and in some instances are under some form of international control. They are both comprised of resources (renewable and non-renewable) and are themselves resources of the global community. Polar management, therefore, is multi-dimensional. On one plane, states

with polar territory act within their capacity as sovereigns to make management arrangements for their areas of jurisdiction. On another plane, states with polar interests combine to form a management coalition. Within the broader context of international law, some of the designated courses of action, as outcomes of international cooperation between polar states, are treaty-based and thus intentional. Ironically, international treaty-based law usually operates on consensus, recommendation and cooperation in an effort to, *inter alia*, *preserve* state sovereignty (Bennett 1988:3). Accordingly questions about the polar regions are very much embedded within the broad issue of sovereignty.

Theories about sovereignty have been further developed to include the notion of *permeable* sovereignty, as identified by Gustafson (1988) and McGrew (1992), whereby political boundaries become flexible to allow for the absorption of external concerns and assistance. This study aims to determine whether a kind of *de facto* internationalization of the polar regions is emerging by looking for evidence of moves towards permeable sovereignty. This might be found by showing how polar states balance their state interests against the demands of interdependence. For instance, how tractable are the polar states with regard to the issues they address; how willing are they to enter into multi-level discourse; how willing are the polar states to recognise non-aligned outsiders; and are they able to amend their views or concede disparate views in favour of collaborative agreement?

Three of the fundamental objectives of eco-management were earlier stated to be dealing with existing causes of damage to ecosystems; minimizing or preventing additional forms of damage; and preserving and using ecosystems rationally and sustainably. Attaining these objectives is attempted through the application of regional, national and international arrangements through regimes. Accordingly, it has been possible to identify three concepts which critically underpin the validity of polar ecosystem management and highlight its value in pragmatic legal terms:

- legitimacy;
- effectiveness; and
- accountability.

These three concepts form the analytical parameters of the study and accord with the broader notion of responsibility for the global ecosystem which will emanate from regional responsibility. For a regime to be *legitimate*, it should primarily be both useful and acceptable to the community of interested groups, including governments, and in some cases the wider international community. Although the imperatives for international, as opposed to regional, acceptance are not as convincing in a legal sense,

the polar regions may be exceptions because of the perception of their utility as global resources or global commons areas.

For a regime to be *effective*, it should have clearly defined goals or objectives which can later be measured against output, with a demonstrated causal relationship between actions and outcomes. Effectiveness may be identified in variable temporal dimensions, usually represented by short-, medium- and long-term phases of the stated objectives. Effectiveness in a regional sense will add credibility to global responsibility.

For a regime to be *accountable* to the interested parties, it should have both legitimacy and effectiveness and importantly, it should contain mechanisms for ensuring transparency, commitment, compliance and liability. Without these components an agreement may be worth little more than the paper it is written on. This is the essence of responsibility at the regional level.

Accordingly, to determine if a regime is *legitimate* (in a regional as opposed to global sense, initially) it should be decided, among other things: i) who are the actors? ii) are they representative of all the rightful stakeholders? and iii) do the boundaries of scope of the regime embrace both the essence and the periphery of the problem? In the global sense, legitimacy is also to be found in comparative linkages with other components of the international order which have a bearing on the regime's objectives.

To be able to make useful judgments about *effectiveness*, it is necessary to establish: i) the objectives; ii) their relevance to the problem; and iii) the anticipated phases of progress towards a desirable outcome. Only once those phases are in motion will it be possible to observe quantifiable outcomes.

Accountability largely stems from the procedural and substantive conditions built into the regime – the endogenous forces. It is likely that accountability cannot be tested until, or unless, a breach occurs. Certainly though, accountability could be measured in a theoretical sense by examining reporting procedures, compliance and enforcement mechanisms and the regulations governing liability for harm.

To underscore the utility of these three working parameters, the final analysis includes discussion on how well, if at all, the polar regimes embrace in an holistic sense the notion of responsibility for the global, as opposed to the regional ecosystem. The preceding discussion can be represented on a template as shown in Figure 2:

	LEGITIMACY	EFFECTIVENESS	ACCOUNTABILITY	GLOBAL ECOSYSTEM RESPONSIBILITY
HIGH	Negotiation Able, respected actors Acceptance (Internal/ External) Linkages (External) Adaptability	Rhetoric cf. Output Changes in actor behaviour Identifiable phases of problem-solving	Legitimacy Effectiveness Monitoring, enforcement and compliance mechanisms Transparency	Polluter Pays Sustainable Development Common Heritage Intergenerational Equity Precautionary Principle
MED				
LOW	Imposition Exclusive Participation Narrow Acceptance Insularity Stagnation	Unrealistic Goals Imprecise Objectives Superficial or no change to actor behaviour	Inability to monitor and enforce Voluntary Compliance Secrecy No reports in public domain	Little or no attention to the notion of Responsibility for the Global Ecosystem or for individual components

Figure 2. Analytical Template for Legitimacy, Effectiveness, Accountability and Responsibility for the Global Ecosystem

There are methodological problems with the measurement of the first three parameters, however. Levy points out that effectiveness can be measured by a change in actor behaviour which leads towards the solution of the problem in a more efficient manner than alternative solutions (Levy 1993:17). But this begs the question: unless alternative solutions are tried, is there any substantial way of assessing this?

In measuring output against rhetoric, one must be mindful of the quality and reasonableness of the objectives adopted by the regime at the outset. It would seem that if the regime includes all of the actors who could reasonably be expected to make an informed and valuable contribution to the dialogue on goal-setting, the likelihood of the regime's objectives being more appropriate and its problem-solving capacity more significant, is enhanced. But this is not necessarily so. Levy cites the Haas study of the Regional Seas Programs, which found that the most successful Program efforts contained a combination of three factors:

i) able actors [specifically marine scientists];
ii) political respect for their authority and expertise; and
iii) open discourse between the actors and policy makers.
(Levy 1993:24)

But Levy criticises one particular aspect of this example, claiming that the United Nations Environment Programme (UNEP) actually *created* the community of scientists because one did not exist (Levy 1993:32).

Further, with regard to actor representation, Wettestad cites the Montreal Protocol negotiations, in which a range of key stakeholders were involved, as an example of constructive pluralism in action (Wettestad 1992:45). But he argues that there are good reasons for 'more exclusive' approaches to state participation, and mentions the deep seabed mining negotiations in the UN Law of the Sea conferences as a case in point. His criticism here was that there were too many actors with diverse political and ideological preferences, resulting in a stifling of the substance of the debate (Wettestad 1992:45). But this raises questions about how many is too many, and who decides on the parties to be included and those to be excluded.

Wettestad's solution to the problem of actor legitimacy is to employ a sequential approach, with the initial stage of negotiations being represented by a broad range of participants, but with a corresponding narrowing of representation as events become more defined and focussed (Wettestad 1992:45).

Levy further proposes that the substantive output of a regime should be considered as a means of achieving objectives and not ends in themselves, and concludes that '...compliance is not given a privileged conceptual position...' (Levy 1993:19). This is debatable. If *any* positive action towards problem-solving is better than nothing, how do you account for the types of regimes Levy claims might have been designed to fail? Levy agrees, however, that the ability to monitor collective behaviour is, of itself, a factor that can influence effectiveness (Levy 1993:26).

This work supports analysis of compliance mechanisms as being integral to accountability. It is conceded that the ability to monitor is directly relative to the nature of the problem and the procedural and substantive mechanisms the regime has adopted to ensure both compliance and liability for breaches. Levy cites attempts to regulate international fisheries as an example of the inherent problems of monitoring and enforcement and he concludes that '...this may be an important reason why few

fisheries have succeeded at preserving their stocks' (Levy 1993:26). (Presumably, Levy means *conserving* stocks, rather than preserving them.)

Initial criteria for measuring the value of the output of a regime have been identified by the work of Wettestad and Andresen (1991) who sought to determine the degree of effectiveness in international resource cooperation. For them, effectiveness implied three factors. One was '...the degree to which the cooperating parties have achieved the declared *goals* of the cooperation.' Secondly, they sought to determine '...the degree of *correspondence* between expert advice (indicating what would be the technically ideal solution) and the regulatory political decisions taken.' Finally, it was necessary to find '...the degree of *improvement* in relation to the hypothetical state of affairs that would have occurred had no international cooperation been initiated in the field in question' (Wettestad and Andresen 1991:2). Of course, comparing hypotheticals with actual events is a very difficult, if not impossible, undertaking.

Wettestad and Andresen's methodological pathways to measuring effectiveness are to some extent compatible with Young's elementary notions of regime inquiry. Methodologically, Young would seek answers about regimes in five specific issue areas: *Institutional character*: what are the principal rights, rules and social choice procedures? How does the regime structure individual behaviour to achieve collective outcomes? *Jurisdictional boundaries*: what is the coverage in terms of functional scope, boundaries and membership, and is this appropriate under prevailing circumstances? *Conditions of operation*: what conditions are necessary for the regime to operate at all? Under what conditions will regimes yield desirable results? *Consequences of operation*: what kinds of outcomes (individual/collective) are produced and how are these evaluated? Finally, *Dynamics*: how it came into existence, its evolution and future direction (Young 1989:29).

All of the above will be taken into account in the application of this template to analyses of the polar regions, although it is acknowledged that the variables are in an immature stage of intellectual development. There is no certainty that they represent a reliable method of regime analysis.

1.6 Conclusions

A series of environmental crises, the concurrent rise of scientific curiosity and investigation and the existence of an environmental movement have all stimulated a

new global environmental agenda. This agenda is based on the concept of ecological interdependence, which calls for a common responsibility for the global environment. This newly developing ethic has been located within such realms as the United Nations and the global information network wherein the formulation of international opinion occurs. It embraces notions which cannot be contained solely within political borders: universal ideas about fairness and reasonableness and justice, and importantly, the survival of the planetary biosphere as a functioning unit. But ecological interdependence and common responsibility do not necessarily sit comfortably with sovereign state independence. Development activity is not always in a symbiotic relationship with the environment, and in cases where unwanted transboundary effects occur, as exemplified in the climate change debate, a new kind of diplomacy is called for in seeking solutions to common problems. There has been a gradual shift towards the notion that state borders are becoming increasingly insignificant in the context of taking responsibility for the global ecosystem. International regimes have been identified as appropriate intervening variables between states and the less-acceptable forum of a world government.

This inquiry investigates the competence of polar states to make and enforce multilateral environmental law given the constraints of, or the freedom to manoeuvre within, evolving paradigms of responsibility for the global ecosystem. The analytical template to be applied to the case study areas seeks to determine the level of legitimacy, effectiveness and accountability each polar regime exhibits, and thus in general terms how they fulfil their roles as regional ecosystem managers. Their competence in the latter will give some valuable insight into their potential competence in the global context.

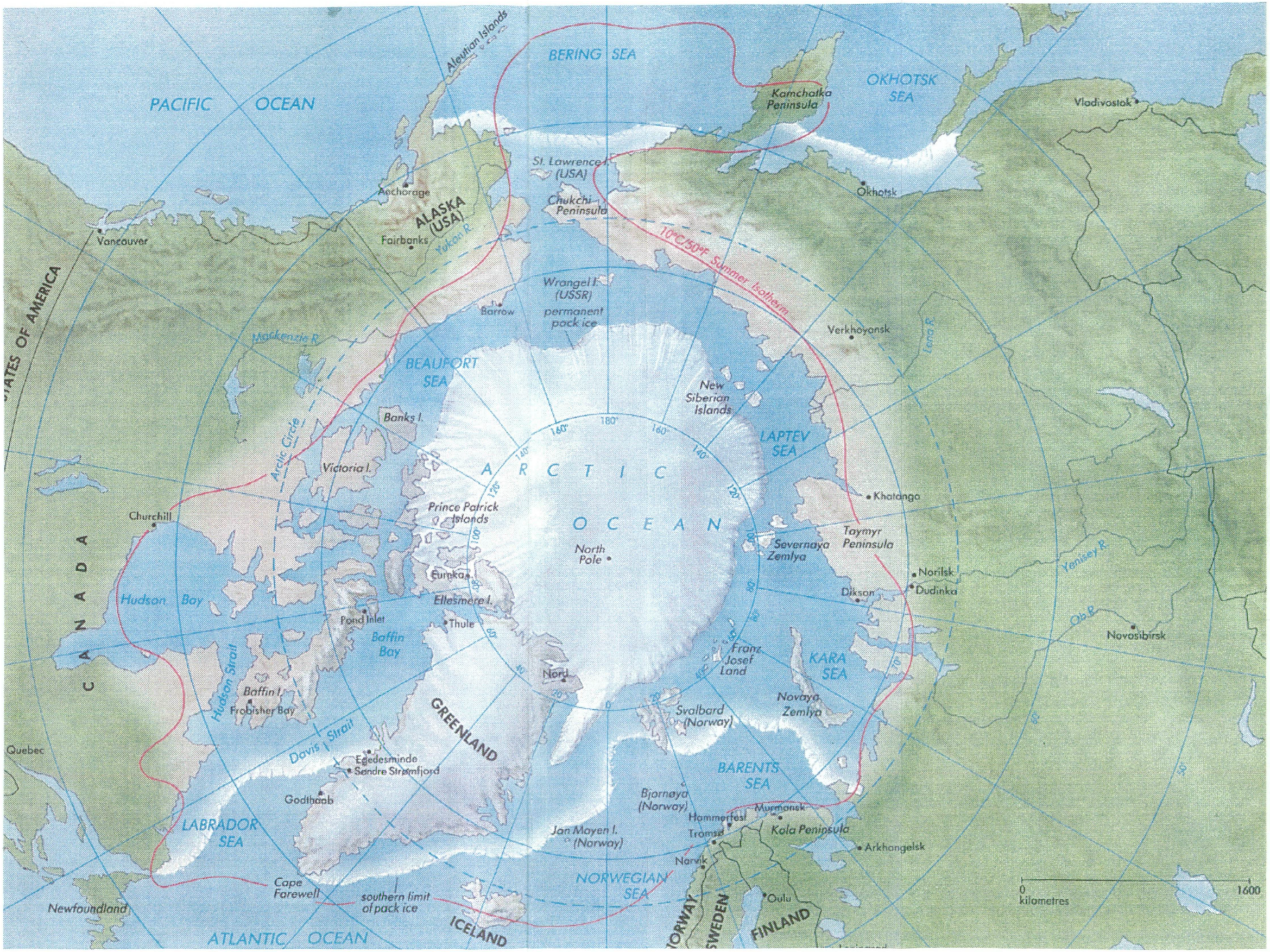
Environmental law-making is a relatively new field of international law. Of the 140 multilateral environmental treaties concluded since 1921, more than half are dated post-1973 (Keohane et al 1993:6). Of these, few relate directly to either the Arctic or the Antarctic. Interestingly there have been, to date, few systematic bi-polar investigations into the nature and efficacy of what little polar environmental law there is.[101] Furthermore, the UNCED process did not deal directly with either of the polar regions. The Arctic as a region was not mentioned *per se*, and there was but one brief mention of the Antarctic Treaty System in the oceans chapter of Agenda 21.[102] Given the central position of the polar regions to global climate processes, this disregard by the UNCED may seem quite remarkable. However, it is understandable given the enormous agenda that the Rio participants worked with, and their holistic rather than regional focus. It may also have been an intentional strategy by the Treaty Parties to avoid political complications with Malaysia and common heritage advocates.

There were certainly many generic statements and declarations emanating from Rio regarding sovereignty and state's rights and duties with respect to the environment which could be applied to both polar regions, in general rather than more specific terms. But the polar regions as ecosystems were largely ignored. Accordingly, this study fills the UNCED void. Following on from the issue-based focus of the UNCED, it takes what was perhaps one of its most important acknowledgments: '...the need to take a balanced and integrated approach to environment and development questions' (United Nations 1992:Preamble) and applies the concept to the polar regions. The comparative study undertaken here seeks to contribute to the general literature on global ecosystem management with a particular focus on the most recent attempts by polar states to address this issue. This will be achieved by using the three concepts which critically underpin the validity of polar eco-management: legitimacy, measured by acceptance; effectiveness, measured in terms of output versus rhetoric; and accountability, measured by the level of responsibility shown. Responsibility is also brought into play in a global sense by measuring the acknowledgment of such concepts as the polluter pays principle, common heritage, intergenerational equity, sustainable development and the principle of acting in a precautionary manner.

The next chapter will describe the geographical and geopolitical architecture of the polar regions, as an introduction to the emergence of polar ecosystem management regimes.

ATLANTIC OCEAN
INDIAN OCEAN
PACIFIC OCEAN
ANTARCTICA
Bouvetøya (Norway)
Prince Edward I. (South Africa)
Iles Crozet (France)
Iles Kerguelen (France)
Heard I. (Australia)
South Sandwich Islands (UK)
South Georgia (UK)
Falkland Islands (UK)
South Orkney Islands (UK)
South Shetland Islands (UK)
ARGENTINA
CHILE
Tierra del Fuego
Drake Passage
Chile
Argentina
United Kingdom
Norway
Australia
New Zealand
France
unclaimed
northern limit of pack ice
limit of permanent pack ice
Antarctic Circle
10°C/50°F Summer Isotherm
Antarctic Convergence
WEDDELL SEA
Larsen Ice Shelf
PALMER LAND
Alexander I.
Wilkins Ice Shelf
Ronne Ice Shelf
Filchner Ice Shelf
COATS LAND
DRONNING MAUD LAND
ENDERBY LAND
Amery Ice Shelf
BELLINGSHAUSEN SEA
Abbot Ice Shelf
ELLSWORTH LAND
South Pole
Transantarctic Mountains
WILHELM II LAND
BYRD LAND
Ross Ice Shelf
AMUNDSEN SEA
Ross I.
Franklin I.
ROSS SEA
Coulman I.
WILKES LAND
VICTORIA LAND
Commonwealth Bay
Belleny Islands
Scott I.
0 kilometres 1600

1 ARCTOWSKI – Poland
2 BELLINGSHAUSEN
3 PRESIDENTE FREI – Chile
4 CAPITAN ARTURO PRAT – Chile
5 PETREL – Argentina
6 ESPERANZA – Argentina
7 GENERAL BERNARDO O'HIGGINS – Chile
8 VICE COMODORO MARAMBIO – Argentina
9 BASE (DE EJERCITO) PRIMAVERA – Argentina
10 ALMIRANTE BROWN – Argentina
11 PALMER – USA
12 FARADAY – UK
13 SAN MARTIN – Argentina
14 ROTHERA – UK
15 SIPLE – USA
16 RUSSKAYA
17 SCOTT – New Zealand
18 McMURDO – USA
19 LENINGRADSKAYA
20 DUMONT D' URVILLE – France
21 VOSTOK
22 CASEY – Australia
23 MIRNY
24 DAVIS – Australia
25 MAWSON – Australia
26 MOLODEZHNAYA
27 MIZUHO – Japan
28 SHOWA – Japan
29 NOVOLAZAREVSKAYA
30 SANAE – South Africa
31 HALLEY – UK
32 GENERAL BELGRANO II – Argentina
33 DRUZHNAYA
34 AMUNDSEN-SCOTT – USA
35 ORCADAS – Argentina
36 SIGNY – UK


PACIFIC OCEAN
BERING SEA
OKHOTSK SEA
Aleutian Islands
Kamchatka Peninsula
Vladivostok
St. Lawrence I. (USA)
Anchorage
ALASKA (USA)
Chukchi Peninsula
Okhotsk
Vancouver
Fairbanks
Yukon R.
10°C/50°F Summer Isotherm
Wrangel I. (USSR)
permanent pack ice
Barrow
Verkhoyansk
Lena R.
Mackenzie R.
BEAUFORT SEA
New Siberian Islands
Banks I.
LAPTEV SEA
Arctic Circle
Victoria I.
ARCTIC OCEAN
Khatanga
Prince Patrick Islands
Taymyr Peninsula
Severnaya Zemlya
Churchill
North Pole
Norilsk
Dudinka
Yenisey R.
Eureka
Dikson
Hudson Bay
Ellesmere I.
Pond Inlet
Thule
Ob R.
Novosibirsk
Baffin Bay
Franz Josef Land
KARA SEA
Hudson Strait
Nord
Baffin I.
Frobisher Bay
Novaya Zemlya
Svalbard (Norway)
GREENLAND
Davis Strait
Quebec
Egedesminde
Sondre Strømfjord
BARENTS SEA
Godthaab
Bjornøya (Norway)
Murmansk
Hammerfest
Tromsø
Kola Peninsula
LABRADOR SEA
Jan Mayen I. (Norway)
Arkhangelsk
Narvik
Cape Farewell
NORWEGIAN SEA
Oulu
Newfoundland
southern limit of pack ice
ICELAND
NORWAY
SWEDEN
FINLAND
ATLANTIC OCEAN
CANADA
0 kilometres
1600

2

The Geography and Geopolitics of the Polar Regions

Introduction

> There is no denying that penguins, whales, icebergs and even blizzards do have an appeal far beyond any rational appraisal of their place in nature.
>
> *E Fred Roots (1985)*

The polar regions are so different that commentators have in the past almost unanimously cautioned against drawing superficial comparisons between them (Osherenko & Young 1989:244). However, some authors in recent times have begun to take note of the utility of polar comparisons, particularly with relation to environmental issues.[103] This study is no exception.

Both of the polar regions are high-latitude, low-population-density, peripheral geographical and geopolitical areas managed by states, but here the similarity ends. The very nature of state relations is diametrically opposed: the Arctic is the province of eight sovereign states; the Antarctic, on the other hand, is in the custody of 42 states comprising an hierarchical decision-making coalition. This raises questions about how polar environmental law is made and enforced within these unique political dimensions, which by their very nature indicate that different solutions must be found to essentially the same problem - that of ecosystem management.

The objective of this Chapter is to present a contextual introduction to the case study subjects. It is divided into two parts and begins by defining the Arctic and the Antarctic from the perspective of their quite remarkable geographical architecture, in order to establish the physical context in which the legal and political frameworks have evolved. The second part re-defines the areas in terms of their geopolitical characteristics, describing the political boundaries, the stakeholders and selective historical features relevant to contemporary politics and thus regime-building.

The Chapter concludes by drawing three principal similarities between the regions. The first is that the locus of decision-making is peripheral to the regions themselves, which has important implications for the relevance of polar environmental law. The second is that the history of state-building in the Arctic and the dynamic process of evidencing state presence in the Antarctic, have determined that the making of concessions to sovereignty will be an important feature of any attempt to regulate anthropogenic activity in both regions. The third similarity between the two regions is the inherent value of the pursuit of science, which incidentally identified both the potential scope of resources and the vulnerable nature of polar ecosystems, thereby adding a further dimension to the law- and policy-making processes.

Part 1
The Geographical Architecture of the Polar Regions

Physically, the polar regions are completely different. The Antarctic can be described as a self-contained geographical region completely isolated from the rest of the world. Its closest physical connection occurs between the southern tip of South America and the northern extremity of the peninsula of Antarctica – a distance of about 800 kilometers across Drake Passage. This physical isolation has proved to be an important parameter not only with regard to Antarctic science but also in regional political affairs.

The Arctic, on the other hand, comprises different physical and cultural parameters which provide both opportunities and constraints with regard to regime building because of its physical configuration and political delineation (Friedheim 1988:496). However, defining the spatial context of either polar region is not a difficult undertaking in this instance.

2.1 The Antarctic

For the purposes of this work, the Antarctic is described as either:

- the area south of 60° South latitude, including all ice shelves; (Antarctic Treaty Article VI)

or

- the area south of 60° South latitude, including all ice shelves, and the Antarctic marine ecosystem delineated by a northern perimeter approximating, as closely as possible, the Antarctic Convergence.[104]

(See Map)

Unlike the Arctic, which is a cross-continental region, the Antarctic is less problematic to describe because it is, in fact, not contiguous with any existing above-water land mass and therefore does not require distinguishing terrestrial zones such as tree-lines or permafrost borders to help determine its boundaries.[105] It should be noted that references to *the Antarctic* in this work include the terrestrial mass and the ocean,[106] islands,[107] icebergs and ice shelves[108] south of 60° South latitude, except where otherwise indicated,[109] whereas *Antarctica* refers only to the continental mass.[110]

Antarctica is an ice-capped continent surrounded by ocean.[111] Almost 12 million of Antarctica's 13.9 million sq km are ice-covered. The thickness of the continental ice determines the surface elevation, which is about 4 km at its maximum. Some sub-glacial basins, such as the Vincennes and the Wilkes Basins, are below sea level but about one-quarter of the continent is over 3,000 metres above sea level.

Antarctica is generally colder than the Arctic because it is continental. It has an average surface temperature of between -60°C and -15°C.[112] There is very little melt of continental ice because of the dry snow process; rather, mass is lost by iceberg calving from glaciers into the ocean. In West Antarctica the bedrock is below sea level and the ice sheet is therefore marine.

The Antarctic marine area is about 36 million sq km and the extent of sea ice varies according to the seasons, wind and ocean current effects. At its peak in about October ice coverage possibly extends over 20 million sq km, retreating to a summer zenith minimum in February of about 4 million sq km. The continent is surrounded by a moat of very deep water with few bridges of shallow water connecting it to other oceans.

Most of the continent is xeric, that is, characterised by little free water for most of the year. Consequently there is only a simple freshwater environment. With only about 2% of the continent ice-free, there are few conditions conducive to terrestrial faunal and floral population colonization. That is not to say there are no plants or animals, but what are there - algae, moss, lichens, bacteria and other microbes - are localized and living at sometimes the absolute limit of existence. The Antarctic marine environment, however, supports a range of floral and faunal colonies from phytoplankton to seaweeds, zooplankton, krill and fish, seals, penguins, sea birds and whales. Seals haul out on the ice to moult, and penguins form colonies in the sparse

ice-free areas. The interdependency between components of the marine ecosystem is the subject of intense scientific investigation and is still not well understood.

Because it has not been proved conclusively that the continent was ever inhabited, humans are aliens in the Antarctic environment. To survive there requires a mastery over Nature and while sophisticated technology may provide relative comfort, it cannot completely insulate the human visitor from the reality of natural forces so powerful as to be almost unimaginable.

Politically, the Antarctic has been partitioned into sectors and this will be discussed further below. The northern limit of each sector corresponds to 60° South, with the exception of the Norwegian claim, which has unspecified northern and southern boundaries and the Chilean claim, which has an unspecified northern boundary[113] (See Map). The area of application of the governing Antarctic Treaty is south of 60° South.

The geographical architecture of the Antarctic ensures that pollutants will stay trapped in the ice for up to hundreds of thousands of years.[114] Furthermore, its isolation makes the containment and clean-up of oil spills and the disposal of waste from scientific stations and field activities both difficult and costly. Importantly too, the vast size of the region makes monitoring and enforcement of environmental law almost impossible.

2.2 The Arctic

The Arctic as a geographic location is variously and somewhat loosely described as either:

- all terrestrial and marine areas above the Arctic Circle,[115]

or

- north of 60°, 65° or 66° North latitude;

or

- all areas north of the 10° Celsius surface air isotherm for the warmest month of July. This may coincide in places with the terrestrial designation of the tree-line;

or

- the area north of the Continuous Permafrost line.

(See Map)

It is usual to apply several of the above definitions, depending upon the context in which the region is being defined.[116] This study cites which definition is being applied, as appropriate.

The Arctic includes the marine areas of the Arctic Ocean: the Beaufort, Bering, Eastern Siberian and Chukchi Seas; the Laptev, Kara and Barents Seas on the Eurasian side of the Arctic Ocean; Davis Strait between Canada and Greenland; the Denmark Strait between Greenland and Iceland; and the Norwegian Sea between Norway and Iceland (Friedheim 1988:496).

These marine areas are bordered by the terrestrial masses of the Russian Federation, Canada, the US State of Alaska, Greenland and Norway. Although all of the land mass of Iceland is below the Arctic Circle, it is traditionally considered an Arctic nation, as are both Finland and Sweden, whose northern extremes are above the Circle though they have, in modern terms, no Arctic coastline.

The marine openings to the Arctic are relatively narrow – the Bering Strait between the Arctic and Pacific Oceans; the Greenland-Iceland and Iceland-United Kingdom (GIUK) Gap to the North Sea and North Atlantic; and the Nares Strait-Baffin Bay-Davis Strait passages between the Canadian Arctic and the Atlantic Ocean. This configuration has led to the generally accepted designation of the Arctic as a 'semi-enclosed sea' in conformity with the UN Convention of the Law of the Sea definition (LOSC, Article 122).

The Arctic Ocean and adjacent seas cover an area estimated to be about 14 million sq km. Apart from some deep basins, the ocean is generally relatively shallow. Consequently parts of the marine environment are hazardous to shipping.[117] Some of the continental shelves on the Eurasian side are thought to extend outwards for up to 1500 km and the potential for hydrocarbon resources to be located within them is high (Friedheim 1988:496).

For approximately 9 months of the year (October to June) the Arctic Ocean is virtually ice-locked, with a frozen coverage of 11.7 million sq km. The ice recedes to less than half that (5.2 million sq km) in summer, allowing considerable opportunity for coastal navigation, although too little is known about the distribution and characteristics of Arctic ice coverage to complete such voyages without risk. There are, however, small areas which remain ice-free year round[118] (Friedheim 1988:496).

The circulation of the Arctic water masses is a complex process involving interaction between the topography of the region, the inflow of warmer North Atlantic water,

fresh water from the Siberian rivers, melting glacial ice, the presence of sea ice, and the atmospheric flux. The ocean circulation and mixing patterns reflect the vulnerability of the Arctic to the long-range transportation and deposition of pollutants from extra-regional sources. Combined with cold temperatures, ice-cover and simple ecosystems, the risk to the Arctic environment from pollution is high. This condition is analogous to that of the Antarctic.

While the Arctic winters are lengthy and severely cold, the summers are short and cool. This seasonal reprieve promotes congenial habitats for a variety of flora and fauna, especially land-based animals such as caribou, reindeer, bears, foxes and musk ox as well as large stocks of marine mammals and fish. These resources are the staple diet and principal trading commodities of many of the indigenous human populations of the polar north. Furthermore, the value of marine resources is heightened by the fact that there is a significant proportion of land which is continually in a state of permafrost, in some places extending below the tree-line - a condition which makes agriculture difficult, if not impossible, in some areas.

These complex physical characteristics of the Arctic also make resource exploitation problematic and risky. It will be shown later that there is a vital nexus between the ability of the scientists to *know* the Arctic and the ability of policy-makers to *tame* the Arctic for their particular economic, military and territorial purposes.

In summary, the polar regions are quite distinct from each other in geographical terms. About the best that can be said as far as comparisons go is that they are both cold and isolated and that their ecosystems are simple and vulnerable. When all of these polar features are combined, the outlook for devising, implementing and monitoring behavioural controls to effectively manage such robust yet vulnerable ecosystems is daunting. Furthermore, different geopolitical idiosyncrasies make the pursuit of eco-management more problematic still.

Part 2
The Geopolitics of the Polar Regions[119]

The poles are the antithesis of each other, in more ways that just geographically. The Arctic supports indigenous communities, large-scale and varied resource exploitation, generally undisputed sovereignty, relative proximity, unrestricted uses including those of a military nature, major shipping and air transport routes and substantial terrestrial faunal and floral populations. The Antarctic has none of these, except for the controlled exploitation of fish stocks in the Southern Ocean and a small-scale tourism

industry. Paradoxically, the Antarctic has a coherent regional management regime with legal personality, whereas the Arctic, with its population, resource exploitation and prominent strategic profile, does not.

A primary similarity between the Arctic and the Antarctic is their importance to the scientific understanding of global processes, and of intrinsic polar processes. It is known and widely accepted that human activities may be substantially altering global climate patterns by enhancing the earth's natural greenhouse condition. Consequently, scientists anticipate a generalized global warming trend and sea level rise, with the greatest physical changes or early indications of such changes being probable in the polar regions, although these conclusions are still highly speculative.[120] Actual scientific information may vary between the Antarctic and the Arctic, due to intrinsic data gathering and interpretation differences and difficulties, but this does not detract from the paramount value of polar science. Together with the oceans and the atmosphere, the poles form an integral part of the global climate process. Therefore, while the regions are remarkably opposite in many ways, there are fundamental similarities based on scientific utility and the vulnerability of the polar ecosystems.

A brief examination of the complex historical foundations of present-day polar geopolitics is useful at this point to put the processes of regime building and dynamics covered in the next two chapters, into perspective.

2.3 Antarctica : From Myth to Reality

Antarctica comprises almost 10% of the terrestrial surface of the earth, and it remains the only place where there is a portion of unclaimed territory.[121] The continent's existence was the subject of much speculation until its actual discovery less than 200 years ago. In the 6th Century BC, the Greek mathematician Pythagoras theorised about the harmony of the spheres, reasoning that there should be a southern counter-balance to the configuration of the known northern hemisphere. Such was the incredulity of his belief, however, that it took more than a thousand years to prove.

From a Eurocentric world, great adventurers set sail to explore the unknown world. In so doing, they proved the ancient Greek theory that the earth was round simply by not falling off the edge. Their perseverance, described as a 'triumph of hope over evidence' (Reader's Digest 1985), is testimony to the great vision of the entrepreneurial Europeans, particularly since many of the expeditions ended tragically or inconclusively.

The first known circumnavigation of the globe in 1519 by an expedition initially led by Ferdinand Magellan[122] did give weight to the theory of the earth as a sphere, but proof of the existence of the great south land was to be more elusive (Reader's Digest 1985). In hindsight it seems that many of the early southern hemisphere explorers may not have comprehended the exact nature of what they were witnessing. Descriptions of huge ice islands and freezing, hazardous sailing weather obviously positioned them further and further south, with each subsequent voyage adding small pieces to the large puzzle of *Terra Australis Incognita,* the unknown southern land. Jean-Baptiste Bouvet de Lozier, a French explorer venturing to 57° South in 1737, encountered flat-topped icebergs and correctly surmised that they might have originated from a land mass further south (Reader's Digest 1985). Captain James Cook is believed to have travelled as far as 71°10' South during his 1773 voyage and concurred with Bouvet's assumption about the origins of icebergs. When the existence of Australia as an island, and the southern extensions of South America and Africa, were verified during the 17th and 18th centuries, the southern hemisphere began to take shape.

> The risque [sic] one runs in exploring a coast, in these unknown and icey [sic] seas, is so very great that I can be bold enough to say that no man will ever venture farther than I have done; and that the lands which may lie to the South will never be explored.
>
> *Captain James Cook*

Cook could never have envisaged the role his logs and meticulous charts would play in the development of the Antarctic. The returning mariners, Cook included, recounted stories of *teeming* sea life, which prompted the massive exploitation of southern polar seals, penguins and whales. Prefaced by the discovery of many sub-Antarctic islands and resources, commercial whaling and sealing ventures (principally undertaken by Americans, Norwegians, British and Russians) eventually led to the identification of Antarctica itself. These ventures also had a profound effect on the nature of Antarctic politics. The spread of national interests and the threat of cross-political cleavages motivated the signing of a joint management accord - the Antarctic Treaty of 1959.

2.4 The Partitioning of the Antarctic

Historically and chronologically there are four elements which have characterised Antarctic affairs prior to the adoption of the Antarctic Treaty: i) discovery and exploration; ii) the harvesting of marine living resources; iii) the pursuit of scientific information; and iv) security concerns. Each of these four stages are intrinsic

elements of the *problem* of what to do with the Antarctic which gave rise to the formation of the Antarctic Treaty of 1959.

The following discussion introduces the nature and role of international cooperation (or lack of it); the issues of sovereignty and security; and the role and politics of both science and resource exploitation, as they are placed in the historical context of regime formation.

2.4.1 Discovery and Exploration

There are three acknowledged phases of Antarctic discovery and exploration: the *heroic* age, including the *air* age and the *scientific* age.

The so-called heroic age prior to World War I is thoroughly documented elsewhere and it is not the intention of this study to reproduce historical events extensively.[123] However a brief account of the principle milestones of discovery and exploration is useful for introducing the genesis of Antarctic regime formation.

Credit for the first sighting of Antarctica in modern times is debatable. Who knows how far some early civilizations may have travelled in their *primitive* craft, or for that matter, whether some of the 19th century merchant whalers and sealers had seen or landed on the continent without realizing, or keeping quiet about it so as not to risk losing commercial advantage? Conventionally, Britain's Edward Bransfield (c1795-1852), Russia's Thaddeus von Bellingshausen (who was actually a German) (1778-1852) and an American sealer named Nathaniel Palmer (1799-1877) all vie for the honour of the first sighting some time in 1820. It is important to note that both Russia and the United States have reserved their rights to claim Antarctic territory partly on the basis of this early activity by Bellingshausen and Palmer. Furthermore, some of Britain's Antarctic claims are based on Bransfield's discoveries.

Sealers are known to have operated extensively throughout the south polar region and American Captain John Davis documented his landing on the Antarctic Peninsula in February 1821. Another American, Lieutenant Charles Wilkes was active in the area between 1838 and 1842, exploring the coastline that bears his name, Wilkes Land, in what is now the Australian Antarctic Territory. Much was to be made of this early American activity, with the US government naming the Peninsula south of the Shetland Islands 'Palmer's Land'. The British, on the other hand, called it 'Graham Land', which persists today as the name of the slim northern extension of the Peninsula. The wider southern portion retains Palmer's name. This was perhaps the first sign of the kinds of conflict unleashed by the desire to possess Antarctic territory.

The principal nations involved in this heroic age were Britain (inclusive of Australia and New Zealand), Norway, Russia and the United States, with Chile and Argentina keeping a watchful presence and the French and Japanese registering an uncommon interest in a land far to the south of their homelands.

The air age of the interwar years prior to 1939 is also well documented elsewhere.[124] It perpetuated the dominant notions of exploration and science which characterised Antarctic affairs of the time. This period of adventure was enhanced by the use of aircraft and other inventions like radio, more sophisticated camera equipment and tracked vehicles. It also represented a time of unprecedented American influence in the Antarctic.

The names of Americans Richard Byrd and Lincoln Ellsworth are synonymous with Antarctic aviation of this period. Their use of post World War I technology facilitated the extensive mapping of the continental coastline and interior. Byrd was the first to fly over both poles and in November 1929 he dropped the flags of Britain, the US, Norway and France at the South Pole. Byrd's chief scientist, Lawrence Gould, travelling inland in West Antarctica, claimed Marie Byrd Land as 'a dependency or possession of the United States' but this claim was never officially endorsed by his government.[125] Australian Douglas Mawson was again active during this time, leading the tripartite British, Australian and New Zealand (BANZARE) expedition of 1929-31. Ellsworth, paired with Herbert Hollick-Kenyon, made the first transcontinental flight from the Peninsula to US Base *Little America*, on the Ross Ice Shelf, in November 1935. Along the way Ellsworth claimed the land between 80° and 120° West[126] for the United States (Quigg 1983:32). This claim, too, was never formally endorsed by the US government.

Several comments should be made at this point about the political ramifications of a German Antarctic presence. First, just prior to World War II, the *Schwabenland*, under orders from Hermann Goering, visited the coast of Queen Maud Land.[127] Seaplanes were dispatched to take aerial photographs and during these sorties propaganda darts emblazoned with swastikas were deposited on the ice. The Germans renamed the area 'Neu-Schwabenland', but this has not been retained. Second, the majority of the so-called *heroic* expeditions had normally been funded by public subscription. However, following the intensity of interest in the Antarctic by the Germans[128] future expeditions would be government funded and directed (Quigg 1983:33). This represented a cross-over point between discovery, exploration, science and politics and was indicative of the way international political affairs were to impinge upon Antarctic affairs in the future.

The scientific age will be dealt with separately at point 2.4.3. All of this historical information is useful to understanding some of the politics behind the ensuing claims to Antarctic sovereignty. The partitioning, described below, remains the most contentious issue in Antarctic affairs today (Hall 1994:Ch.3). Britain would formally claim a large percentage of the continent, now separated into the British Peninsula claims of 1908 and 1917, the Ross Dependency (New Zealand) claimed in 1923 and the Australian Antarctic Territory proclaimed in 1933. The latter two claims were ceded to the Governments of New Zealand and Australia by the British. No serious or substantial objections were raised to any of these British claims at the time (Quigg 1983:112). Norway staked its claim to a large sector of Antarctic territory encompassing Queen Maud Land while the *Schwabenland* was en route from Germany. France successfully claimed Adélie Land, after a simmering controversy with British and Australian authorities over its right to do so.[129] Each of the above five countries based their claims on discovery and occupation. In the early 1940s two South American countries, Chile and Argentina, also made claims to portions of the Antarctic Peninsula and the proximate continental area. Argentina and Chile both based their claims partly on the succession to original Spanish rights through a Papal Bull dated 1493. This is not considered valid, however, as the Spanish neither discovered nor occupied any part of Antarctica (Myhre 1986:13). The Chilean and Argentinian claims overlap, both with each others' and with the British claim.[130] Both the United States and the former Soviet Union (now Russia) reserved their right to claim, no doubt in response to their perceived interest and activity in the *entire* region.

The reason why all of these countries were in the Antarctic in the first place was because of the promise of a rich Southern Ocean harvest, the potential for which was identified during the early discovery voyages. Marine resource exploitation, therefore, played a prominent role in the partitioning of the Antarctic.

2.4.2 Marine Living Resources Harvesting

The first rush to exploit Antarctic living resources began in 1784, corresponding with the decline in northern polar whale and seal stocks. Using data from Cook, among others, to locate the resources, the harvesting was rich and relentless. This had disastrous results for some Southern Ocean species of fur and elephant seals. By 1830 their colonies were almost wiped out and the harvesters turned to the more difficult and dangerous pursuit of the great whales (Quigg 1983:9). They also turned their attention to penguins, millions of which colonized the sub-Antarctic islands. Penguins were slaughtered *en masse* for their oil. While the mid-19th century period

represented a relative hiatus in Antarctic continental exploration, much activity was occurring in the Southern Ocean at this time. From about 1871 on, sealing resumed in response to the partial recovery of the seal stocks depleted forty years earlier.

A shore-based Antarctic whaling station was established in 1904 at Grytviken on the island of South Georgia by a Norwegian Antarctic explorer, C A Larsen, and was funded by Argentinian capital (Walton 1987:26). The first attempt to regulate the whaling industry was made in 1906 when the British Governor of the Falkland Islands (with responsibility for South Georgia) issued The Whale Fishery Ordinance (1906) laying down rules for commercial exploitation (Walton 1987:26). Harvesters were required to hold licenses and to respect both quotas and designated fishing areas (Hall 1986:17).

As the fishery expanded within the region, the British were compelled to formally lay claim to their Antarctic territory and to constitute the Falkland Island Dependencies (FID) (Hall 1986:17). The FID thus incorporated the rich sealing and whaling grounds off South Georgia, the South Orkneys, the South Shetlands and the South Sandwich Islands, along with the northern tip of the Antarctic Peninsula, Graham Land (Hall 1986:13). The original definition of the FID was amended in 1917 to expand the British claim into an Antarctic continental sector extending south to the Pole (Hall 1986:14).

The Argentinian presence at Grytviken from 1904, the Chilean presence at Deception Island in the South Shetlands from 1906 and the omnipresence of the Norwegians[131] stimulated and underpinned the British sovereignty claims (Hall 1986:15-16). An official Norwegian inquiry regarding British intentions in the region prompted the British to formally annex their sub-Antarctic and Antarctic territory. This was done essentially to protect British economic resources: the rent from licences, an expanded investment in the industry by British capital, and the industry's primary products, especially whale oil (Hall 1986:15-16).

Without presenting an expansive history of whaling in the Southern Ocean, which has been well documented elsewhere,[132] suffice to say that massive exploitation occurred, facilitated by the slip ramp, the development of steam and diesel-driven catchers, factory ships and the explosive harpoon gun.

It is interesting to note the involvement of a Norwegian scientist, J A Mørch, at this time. Mørch urged the British to tighten up 'a scandalous waste of raw material' by not issuing whaling licences to any company without first gaining their assurance that they would use the whole carcass instead of just extracting the blubber

oil (Walton 1987:26). The British accepted this proposal and all licences issued from October 1909 onwards contained such a requirement (Walton 1987:28). Initiating the collection of catch data is also credited to Mørch. Canvassing the British Museum of Natural History in 1910, he sought an obligation on whalers to record information in log books on the number of whales taken, species, sex, the gravidity of females, weather conditions and the presence of plankton. Mørch also suggested that charts should be annotated with distribution characteristics and furthermore, that a portion of the rent from the licences be set aside to fund scientific investigation (Walton 1987:28). The British endorsed all of Mørch's ideas and the subsequent RRS *Discovery* and the *William Scoresby* scientific voyages were funded in this way. While this was not necessarily the first evidence of the influence of science, which was a primary motivation in the heroic age of exploration too, it was possibly the first instance of a measure of species protection prompted by scientific concern.

Antarctic whaling proved to be a double-edged sword. It did, in fact, facilitate a large amount of scientific information on marine biology (including birds and seals), weather conditions, ice characteristics and transport in the Southern Ocean. Because whaling was initially an extremely lucrative business, tax receipts funded many early scientific investigations and industry vessels transported expeditioners around the region. But like sealing, the whaling industry was self-defeating. Whale stocks declined rapidly and despite the negotiation of an International Convention on Whaling in 1937 which subsequently proposed, among other constraints, quotas and inspection procedures, this destructive trend seemed irreversible. A Whaling Commission was established in 1946, but it had little immediate effect. The last shore-based whaling station on South Georgia was closed, due to lack of whales, in 1965, but it was not until 1982 that the Commission announced its intention to prohibit commercial whaling four years hence. In the meantime, many species of whales were harvested dangerously close to extinction. The great whales are now protected in the Southern Ocean Whale Sanctuary, negotiated by the IWC in Mexico in May 1994.

In a way the tragic consequences of this early unfettered marine harvesting were the conduit to recognition of the economic value of polar marine sciences, and led to several attempts to regulate the harvesting.[133] It was acknowledged that this kind of artificial disruption to the balance of the Antarctic marine ecosystem had the potential to effect the fecundity of other species in the food chain. By removing the large species of prey,[134] the food chain is altered in favour of other species and may modify the population characteristics of a number of associated and dependent species. It was also acknowledged that the exploitation of marine stock such as krill from the lower end of the food chain may also have unknown consequences (Quigg 1983:77). In fact, the interdependence between the elements of the Antarctic marine ecosystem is a

subject which occupies significant scientific enquiry today, simply because too little is known about it.

As stated earlier, many of the adventurous expeditions of the 19th century were science-oriented, and science has provided a continuous impetus to Antarctic activity up to the present time.

2.4.3 Scientific Endeavour

Most notable among the early scientific endeavours are the voyages of Bellingshausen (representing Russia), Wilkes (US), Dumont d'Urville (France) and James Clark Ross (Britain). Retrospectively, their scientific exploits are seen as important and in some respects as setting the tone of things to come (Walton:1987:8). Better prepared expeditions, better ships and charts and the application of Arctic experience all combined to make Antarctic exploration valuable in contemporary scientific terms.

It must be noted that the value of international cooperation in Antarctic science, which is the keystone of scientific endeavour generally today, was recognised as early as the middle of the 19th century. Commander Matthew Fontaine Maury, head of the US Naval Observatory and Hydrographical Office, frustrated by the inadequacy of Southern Ocean data, proposed in 1861 an 'international cost-sharing assault on Antarctica' (Quigg 1983:16). The United States, Austria, France, Britain, Italy, The Netherlands, Portugal, Spain and Russia were to be involved and although this offer was never taken up, Maury's notion indirectly led to the famous British HMS *Challenger* oceanographic expedition of 1874.
The Antarctic was also the subject of limited scientific focus during the First International Polar Year of 1882-83, when three stations were established in the southern hemisphere, one of which was on South Georgia. A much higher profile was achieved during the Second Polar Year of 1932-33, when 44 nations took part in polar observations. But World War II neutralised many of the achievements of this occasion because records were lost or never written up. It was therefore decided to hold another - the International Geophysical Year (IGY), beginning in 1957 (Walton 1987:32). In the interim, the *Discovery* voyages 1925 - 1939 (*Discovery II* from 1929) and 1950 - 51, represent perhaps the most comprehensive marine science investigations of the time.

The International Council of Scientific Unions (ICSU) was in favour of the proposed third international year and established the Comité Spéciale de l'Année Géophysique Internationale (CSAGI) to coordinate programming and participation. The Antarctic, by virtue of the paucity of existing scientific information, was singled out for special

treatment, as was outer space. In 1955 the Soviet Union registered its intention to participate in the Antarctic programs of the IGY and then, in 1957, launched its first *Sputnik* spacecraft (Quigg 1983:47). These activities by the Soviets caused significant concern throughout the scientific community, however CSAGI managed to 'depoliticize' science in this instance, despite the undercurrents of disputes between the US and the Soviet Union, and between Britain, Chile and Argentina, not to mention global politics in general (Hall 1994:Ch.5).

The ensuing 18 months of data collection from July 1957 to December 1958 by 12,000 scientists from 67 nations generated a total of 48 volumes and a collection of scientific papers the number of which is unknown (Walton 1987:34; Quigg 1983:47). This was quite an achievement considering the placement of the IGY within the Cold War power struggle and is testament to the conflict resolution and confidence building skills of the national scientific entrepreneurs.

One commentator, in fact, has suggested that the success of the IGY might in part be due to the fact that scientists, not governments, were the negotiators and set the programmes and sites (Quigg 1983:48). It will be shown later that, prior to the IGY, the governments with an interest in the Antarctic had tried and failed to come to agreement on the administration of this valuable polar laboratory. Thus in many respects the success of the IGY in purely functional terms provided the kind of stimulus the policy-makers needed to begin negotiating a solution to the problem of Antarctic administration. The fact that the placement of scientific stations recommended by CSAGI was accepted by the participating nations exemplifies their willingness to cooperate during the IGY. The US, for example, were located by CSAGI at the South Pole, and the Soviets who had originally wanted that site, deferred and attempted to establish bases elsewhere (Quigg 1983:48).

The nature of science programs during the IGY, encompassing 14 different fields of inquiry, was also left to the province of CSAGI. A Special Committee on Antarctic Research (SCAR)[135] was formed in 1957 on the initiative of the United States to coordinate the extended post-IGY activities (Walton 1987:58). In one sense the establishment of SCAR could be regarded as tangible evidence of a science-driven, confidence-building, international cooperative effort manage the Antarctic for the benefit of all humans.

The relationship between the Soviets and the Americans demonstrates the scientific priority of the IGY, particularly since both countries, along with other participants, freely exchanged their scientific personnel and data. The post World-War II Cold-War tensions were superficially seen as secondary to the pursuit of scientific

information.[136] Both the US and the Soviets played an enhanced role, as their global status demanded, with each having one of the principal IGY data centres on its soil (there were three in total). And further, the Soviets, despite attracting the disdain of the scientific community, carried out extensive mapping projects thought too controversial to be supported by CSAGI because of military and political connotations. The Americans, it appears, did not conduct similar studies because of budgetary restraints. The Soviets also announced at this time their intention to study Antarctic mineral resource potential (Quigg 1983:48).

Alongside the major players whose nationals had discovered and explored parts of the continent, the Republic of South Africa entered Antarctic affairs at the time of the IGY. South Africa continued and expanded its operations in its sub-Antarctic territories of Marion and Prince Edward Islands and occupied the British meteorological station at Gough Island. Thus by the end of the IGY, the 12 nations which were to become the founding members of the Antarctic Treaty had established a profile in Antarctic exploration, science and resource exploitation.

To assert that the Antarctic was anything greater than a marginal or peripheral area of international concern prior to the IGY is to over-emphasise the profile of the southern polar region at that time in the mind of the international community. With two world wars, global depression and innumerable outbreaks of regional hostilities to contend with, the Antarctic was only a relatively minor area of concern in the strategy of the pursuit of global peace and harmony. However, this does not detract from the importance placed on the Antarctic by a few powers central to polar affairs. Nor does it detract from the extraordinary levels of cooperation reached during the so-called *depoliticised* IGY.

It is incomplete, however, to represent the IGY as simply one huge cooperative scientific expedition unrelated to or unaffected by other political machinations. Consideration of the underlying state security concerns, pre-Antarctic Treaty, is important to an understanding of the political emotions which led to the formation of that historic accord.

2.4.4 Security Concerns

One of the major security considerations in the period before the Antarctic Treaty was the attitude of the Soviet Union. They had participated in the IGY, despite attempts to exclude them. They had also signalled, in 1957, their intention to continue and expand their Antarctic activities post-IGY, which one commentator noted may have been a stimulus towards the establishment of SCAR (Hall 1994:111-12). While other

participating nations were initially reluctant for financial reasons to extend their IGY activities, the Soviet announcement led them to review their decisions. Security concerns did not begin at this time, however. It has been identified that they had, in fact, surfaced more than thirty years before the IGY.

The discovery of a use for whale oil as a component of glycerine used in explosives was a major coup for the British which held power over the Antarctic whaling grounds and thus a strategic advantage during World War I (Hall 1986:27). Obviously those whaling grounds required Imperial sanction to both protect and expand investment, as the British actions in claiming territory during the first two decades of the 20th century witnessed.

In 1924 the United States publicized its policy with regard to the nature of claims to Antarctic territory. In the light of British and French claims, the US Secretary of State, Charles Hughes, in a communication to the Norwegians, stated that mere discovery and taking possession of Antarctic territory: '...would afford frail support for a reasonable claim to sovereignty...unless the discovery is followed by an actual settlement of the discovered country' (Hughes, quoted in Hall 1989:137). Essentially the US felt it was not in a position to either make claims to Antarctic territory, or to acknowledge the claims made by others (Hall 1989:137). This attitude, embodied in what has become known as the 'Hughes Doctrine', might explain why the United States did not formally endorse those claims made by its early explorers (as noted above). Interestingly, the US attitude was not affected by international legal precedents which were to follow.

The cases of the *Island of Palmas*,[137] *Clipperton Island* [138] and the *Legal Status of Eastern Greenland*[139] provided precedents regarding sovereignty over territory by establishing, among other things, a definition of the concept of *effective occupation.*[140] The principal opinions of these judgments were that territory, having been acknowledged *terra nullius* (that is, owned by no-one) was thus susceptible to occupation. For that occupation to be effective, *per se*, there must be displayed on the part of the sovereign, both '...the intention and the will to act as sovereign, and some actual exercise or display of such authority' (Dixon & McCorquodale 1991:232). Although the climate and isolation of Antarctica were not conducive to the growth of settlements and population, it was still theoretically possible, in the context of these cases, to exhibit effective occupation through the siting and staffing of scientific bases and the conduct of scientific activity.

On an entirely different plane, several factors pointed to the perception that the Antarctic might be used as a base against the southern hemisphere dependencies of

Britain (Hall 1986:28). There was speculation about the strategic importance of Drake Passage, the shipping route between the tip of South America and the Antarctic Peninsula. The Panama Canal, which was opened in 1914, was considered vulnerable to enemy activity and thus Cape Horn and Drake Passage were seen as a vital alternative Pacific-Atlantic link which must be secured in times of tension (Hall 1986:23; Beck 1986b:32). It was also known that German naval vessels were cruising the Southern Ocean during the Second World War. The proximity of Antarctica to the southern colonies of Australia, New Zealand, South Africa and the Falkland Islands presented a potential challenge to the British Empire by the Germans (Hall 1986:28). Accordingly in 1944 the British initiated a secret naval expedition, *Operation Tabarin,* to assert an Antarctic presence.

The move was prompted in part by the establishment of the US Antarctic Service (1939) and the announcement of the claims to Antarctic Territory by both Chile (1940) and Argentina (1943, amended 1946), which overlapped with each other's claims and with the British claim. The pre-existing Anglo-Argentine dispute over the FID[141], particularly South Georgia, added to the tension, as the British suspected that the Argentinians intended to assert title over the whole of the Dependencies (Beck 1986b:32). This was happening at a time when the US had publicly voiced its concern over the notion of effective occupation and had articulated its *open door* policy (Beck 1986b:31). The door to the Antarctic was, presumably, open as well (Hall 1989:139). The war-time allegiance of Argentina with Germany and the German activity against British-financed Norwegian whalers added to Britain's security concerns.

Operation Tabarin established scientific bases on the ice and thus became a demonstration of the intent and will of the British to act as sovereign in relation to its Antarctic territory - sending a clear signal to any *intruders* (Beck 1986b:32). *Operation Tabarin* was decommissioned after the end of World War II into a civilian organisation - the Falkland Island Dependencies' Survey (FIDS) and was later renamed the British Antarctic Survey (BAS).

There followed a period of intense interest in the region by the United States. Its *Operations Highjump* (1946-47) and *Windmill* (1947-48) were large-scale scientific expeditions during which barely disguised military training exercises were conducted. The training was considered as essential polar experience and there is no doubt that the North Americans had the Arctic in mind in this context, but because of the proximity to the Soviet Union, it was prudent to shift the venue to the southern polar region. Furthermore, manifestations of Cold War tensions had seeped into Antarctic endeavours (Hall 1994:68). Despite United States activity during these two

Operations and speculation of a claim being imminent, still no formal claims to Antarctic territory were made by them (Hall 1994:68-69).

Both Chile and Argentina increased their presence in the Antarctic post-World War II. Tense political relations between them and Britain led to Britain seeking a solution in the International Court of Justice in 1947 and again in 1955.[142] Not surprisingly, the South Americans presented a united front against Britain by both refusing to accept the Court's jurisdiction (which was their right) and by reaching a bilateral agreement asserting their sovereignty (albeit with unspecified national boundaries) over and above that of Britain, in the disputed areas (Beck 1986b:35-6). A number of volatile disputes between the three were dealt with by diplomatic means, which produced nothing better than stand-off results. But there was little doubt that the rivalry was fuelled by sovereignty and security issues, with the pursuit of scientific information being invoked to legitimate any presence on the ice (Beck 1986b; Hall 1986, 1994).

The United States found itself in an ambiguous and compromising position. It was allied to the British through NATO and to the South Americans through the Inter-American Treaty of Reciprocal Assistance of 1947.[143] The dilemma was that the Rio Treaty, a 20-nation agreement on pan-American security, obliged the US to assist any American state against an aggressor (Article 3). The area of application of the Rio Treaty included that part of the Antarctic where the British, Chilean and Argentinian claims overlapped. It was entirely possible, therefore, that the South Americans could invoke the Rio Treaty against Britain as an 'aggressor' in their Antarctic jurisdiction. Accordingly the US made reservation to the Treaty's effect upon the status of sovereignty in the Security Zone (which contained these disputed Antarctic territories) thereby distancing itself from any possible conflict of allegiance.

US ambivalence towards the problem of whether or not to claim Antarctic territory was thus understandable. One argument against making a claim was that it would inevitably bring them into conflict with other claimants: the appropriate territory for a US claim had already been seized, and what was left - the unclaimed sector - was not coveted because of its inaccessibility and unattractiveness in material terms (Beck 1986b:39). On the other hand, it was thought that a US claim would both satisfy domestic wishes and perhaps more importantly, preempt any Soviet claim (Beck 1986b:39).

This was a difficult time for all Antarctic stakeholders or potential stakeholders. There were seven states already claiming territory: Argentina, Australia, Britain, Chile, France, New Zealand and Norway. Australia, Britain and New Zealand had formally recognized each other's claims, along with recognizing the French and

Norwegian claims. In return, both France and Norway acknowledged the Australian claim. Chile and Argentina stood united against the overlapping British claim, despite the fact that their claims overlapped with each other's as well. By this stage Japan too had expressed its interest in and rights to Antarctic territory. The Soviets had reserved their opinion about the status of claims, and the US, by virtue of the Hughes Doctrine, had rejected all extant claims, reserving its right in the process (Hall 1994:62). In short, the whole sovereignty question had become a *problem* to which no solution seemed immediately forthcoming.

In the context of regime formation, many of the stakeholders had fairly distinctive Antarctic administrations placed within the ambit of their national scientific programmes. Building upon the framework of discovery, exploration and the pursuit of science, the stakeholders had legitimate interests in the future of the Antarctic. Furthermore, a problem existed which was a common concern to all parties. But how to solve the problem became, in fact, part of the problem because of the complex allegiances between the United States and Britain, and between the United States, Chile and Argentina. The insistence by the Soviets of participation in Antarctic affairs underlined the whole issue. It is important to note that during this period no explicit environmental concerns were raised by any nation, despite scientific evidence of the vulnerability of the polar ecosystem.

2.5 Antarctic Sovereignty: a *modus vivendi*

How was the Antarctic *problem* solved, or rather, was it solved at all? There were three proposals made during 1947 and 1948 to resolve the international discord emanating from the issue of Antarctic sovereignty.[144] The first two attempts were unsuccessful, for a variety of reasons, but the third became the foundation upon which the Antarctic Treaty was built.

In the first attempt, the United States initially proposed the internationalization of the Antarctic through something like a UN Trusteeship, but Britain opposed this on the grounds that it would necessarily permit Soviet participation. The British preferred a planned administration by an 8-nation condominium, which would necessarily *exclude* the Soviet Union but include the United States as the eighth stakeholder (the other seven being the claimant nations). The US was persuaded to adopt the condominium proposal in principle, however neither suggestion gained the support of all other Antarctic nations, to some degree because of a desire to keep the Soviet Union, for security reasons, and the United Nations, generally, out of the Antarctic (Beck 1986b:39-40; Hall 1994:Ch.4). US foreign policy was still stridently anti-Soviet:

'...no occasion should be given to the Soviet Union to participate in an Antarctic settlement or administration...' and further, that US actions should '...forestall any Soviet attempt to become a territorial claimant' (Beck 1986b:40). Conversely, the Australians could see no reason why internationalization was necessary at all, preferring instead to retain the *status quo* (Hall 1994:120-21). There is evidence to suggest that the United States was operating in close liaison with its NATO ally, Britain, during this time (Hall 1994:71-7). However, it was Chile which proposed the third solution - a *modus vivendi* .

Chile's unilateral Escudero Declaration of July 1948 sought a 5 or 10 year suspension of claims and rights in the interests of the pursuit of science. The Declaration also proposed that the area of application be south of 60° South; that scientific information be exchanged; that freedom of scientific research prevail and that a consultative committee be established (Beck 1986b:40; Hall 1994:81, 86).

Learning of the Chilean *modus vivendi*, South Africa and Belgium both made representations to the US government in 1948 for the right to participate in any negotiations towards a solution to the Antarctic problem on the basis of their interests in the region (Hall 1994:83). However, outright rejection of internationalization by the Argentinians, this counter-proposal by the Chileans and scepticism from Britain, France, Norway and Australia delayed commencement of any dedicated negotiations. Ironically, it may have been the Soviet Union which propelled the issue towards the seemingly inevitable conclusion of an Antarctic conference. In 1950 the Soviets countered US enmity with a public declaration that it was opposed to attempts to exclude it from any Antarctic regime, firmly asserting that they could not: '...recognise as lawful any decision on the Antarctic regime taken without its participation' (Beck 1986b:40).

An interesting nexus can be drawn here between Arctic and Antarctic affairs. Beck noted:

> For some Antarctic powers - most notably Norway, the UK and the USA - Soviet moves possessed Arctic implications, such as on account of the long-standing tendency to interpret legal and other inter-connections between the two polar regions.[145]

As evidence of this, a 1948 US policy paper recommended that the successful conclusion to the internationalization proposal should be accompanied by an official US claim to Antarctic territory. This was justified on the basis of discovery and exploration and was designed to preempt any possible Soviet claim to the hitherto unclaimed Pacific sector. It was argued at the time that the Soviets were not likely to

make an Antarctic claim on the strength of Bellingshausen's alleged first sighting because such a move would have implications for the Arctic. The irony was that Soviet Union claimed sovereignty over islands in the Arctic to which it applied the sector principle but over which other nations would have similar claims on the basis of discovery and exploration.[146]

The Soviet declaration about participation subsequently brought France onside (with the proviso that its sovereign claim was not compromised) but had the effect of further alienating both Chile and Argentina. At the same time it placed the United States in the invidious position of equality with the Soviet Union: neither had the status of claimants to Antarctic territory, but neither would allow the negotiation of a solution to the Antarctic problem to proceed without their participation.

During the decade of the 1950s tensions between Britain, Chile and Argentina concerning their overlapping territorial claims continued to escalate. However with all of the Antarctic states diverging in their support for either one proposal or another, achieving a level of international cooperation with a corresponding element of consensus over the issue which would be conducive to regime formation, was proving to be a difficult task. While there was recognition of the problem (that is, the status of territorial claims, the security dimension, and their common effects) states quite rightly were unwilling to forego domestic interest for the sake of international cooperation. After all, apart from science and marine resources, what else did the Antarctic have to offer? The low international profile of the Antarctic problem during the early 1950s, despite the ongoing Anglo-Chilean-Argentinian conflict, might also be attributed to the intervention of the Korean War in the foreign affairs priorities of both Britain and the United States.

In essence, the most salient features of the Antarctic problem were: i) the desire to exclude the Soviet Union from the Antarctic for security reasons; ii) the desire to safeguard both claims to territory and the elitist position of the claimant nations; iii) the non-claimant status of both the Soviet Union and the United States; iv) the Anglo-Chilean-Argentinian stalemate; and v) the prominent role of the United States in seeking a solution to these problems. The impasse was eased by the International Geophysical Year of 1957-58.

The success of the IGY in terms of cooperative scientific programs must have had some influence on the decision of the Antarctic stakeholders to meet at the conference table. As a confidence building measure, the IGY was unparalleled given the prevailing political circumstances of the time. It was thus in a climate of international cooperative scientific effort, international security concerns, the American *open door*

and obvious anti-Soviet policies and the Soviet recalcitrance that the negotiation of the Antarctic Treaty was placed.

It is known that the Eisenhower administration reviewed US Antarctic policy in 1954, prior to the IGY, and resolved to reassert its rights in the Antarctic at an appropriate time; to seek a resolution with Britain, New Zealand, Australia, France, Norway, Argentina and Chile to conflicting claims; and to pursue an international remedy to reduce friction and solve territorial problems (Hall 1994:119-120). No multilateral discussions were forthcoming at this time. However, notice of the intention of the Soviets to actively participate in the IGY became a cause for concern, not only for the United States but also for Australia, Britain, South Africa and New Zealand.[147]

Secret, informal discussions were held in 1957 between the United States, Britain, Australia and New Zealand. The participants canvassed a range of options for an international regime to administer the Antarctic, including the condominium proposal. It is known that at this time the US was still procrastinating over making a territorial claim (Hall 1994:129). It is also known that official US policy included in its objectives provision for the equitable exploration and exploitation of Antarctica's natural resources (Hall 1994:132). But there was no mention made of environmental considerations. A decision was taken to postpone formal negotiations until after the IGY had ended and after the conclusion of Argentinian elections in early 1958.

The pre Antarctic Treaty history has been investigated extensively by, among others, Plott (1969) and Hall (1986, 1994). The studies have demonstrated that the process of getting to the conference table was driven by a prolonged diplomatic paperchase between the interested parties. The complex range of motives and objectives articulated by the various governments was further complicated by domestic politics, particularly between the internal departments of the United States government. Keen to capitalise on the positive precedent of international cooperation during the IGY, US President Eisenhower finally invited the other 11 Antarctic nations to participate in a conference on the Antarctic (Hall 1994:153). The conference was described by Secretary of State, John Dulles, as intending to:

> ...establish in Antarctica an international regime which will prevent the monopolizing of any part of this new continent for the military purposes of any nation but assure an 'open door' for the peaceful pursuits of all mankind.

(Dulles quoted in Hall 1989:111)

Representatives of the 12 nations historically most active and interested in Antarctic affairs – the US, Soviet Union, Britain, Australia, New Zealand, Belgium, South

Africa, Norway, Chile, Argentina, France and Japan – met at the conference table in Washington in October 1959. The inclusion of the Soviet Union was a contentious issue, but prudence prevailed and it was eventually agreed that to exclude them would have been politically unsound, given their position as a world power (Hall 1994:127). Thus years of closed diplomatic dialogue followed by nearly 18 months of preparatory meetings (60 in total) finally brought order and a widely acceptable agenda to the Conference.

After lengthy and spirited negotiation lasting six and a half weeks, the Antarctic Treaty, embracing the essence of the Escudero Declaration, was signed on 1 December 1959 (Appendix 1). At the very least, the Treaty was a 'framework for effective international cooperation in Antarctica' (Parsons 1987:6) and at best, a remarkable example of international diplomacy and cooperation in extremely tense and volatile political circumstances.

2.6 Conclusions

Investigation of Antarctic regime formation usually centres on three aspects: science, security and sovereignty. How much the pursuit of scientific curiosity buttressed the ability of the states to cooperate on the formulation of the Treaty is a subject of much debate. Scientific commentators tend to focus on the provisions within the Treaty for scientific freedom in support of their argument (Walton 1987). How virulent the security concerns were is also debatable; political historians are likely to focus on the demilitarisation aspects (Beck 1986b) and Soviet containment (Hall 1994) of the Treaty. Legal commentators predictably focus on the unique and ambiguous treatment of sovereignty issues. Article IV of the Antarctic Treaty, which will be discussed in more detail later in this work, has been remarkably effective in facilitating international cooperation despite claims to sovereignty (Triggs 1986, 1987). Regardless of the supremacy of any one notion over the others, it is certainly a great irony that a rudimentary accord born out of enmity, suspicion, hegemonic aspirations, domestic political complexities and colonial expansionism could have endured for 35 years.

Investigation into the nature of ecosystem management of the Antarctic, pursuant to the Antarctic Treaty and its attendant legal instruments, will continue in Chapter 3. Meanwhile, this study turns to the northern polar region, to identify the salient features of its geopolitical history.

2.7 The Geopolitics of The Arctic

The Arctic has been in the spotlight of international politics since the end of World War II because of the strategic proximity of the territories of the former USSR and the United States. But with the end of the Cold War having been proclaimed, Arctic affairs have begun to take on a new, more cooperative hue. The hegemonic 'East-West' competition which subsumed all other activities and effectively constrained the development of pan-Arctic (and international) relations no longer manifests itself quite so boldly. Bilateral arms reductions, coupled with a lessening of tension between the US and Russia, are expected to change the strategic nature of the Arctic from that of a potential theatre for war, to one of a less-threatening nature.[148] In addition, there is mounting evidence of the re-emergence of regionalism, based historically on close cultural, political and economic ties within parts of the Arctic.[149]

To the untrained analyst it appears that the complex inter-state and regional alliances, which will be described below, have in large measure been dictated by political expediency in the context of regional, national, state, international and more recently, European Community considerations. Pursuing independent foreign policies could not have been a simple matter for the Arctic states in the four decades post-World War II. While Canada and the US are typically *Western* allies, they have had major differences of opinion and policy regarding such issues as sovereignty and transboundary pollution. This is exemplified by their continuing disputes regarding the right of passage of US surface vessels through what the Canadians claim as their historic internal waters[150] and the groundbreaking unilateral declaration of the Canadian Arctic Waters Pollution Prevention Act[151] and the Trail Smelter Case.[152] Furthermore, the Nordic countries, while aligned on some matters, naturally act unilaterally on others. Norway and Iceland are both NATO allies, yet Sweden has remained neutral outside NATO, and Finland has held Russian attention for the most part at arms-length while also managing to retain its neutrality. Furthermore the issue of European Union has been fought along purely nationalistic lines.

It is in the northern reaches of the Nordic countries that regionalism can most readily be identified. It is occurring in several spheres: i) at the intra-state level, where a specific geographical area necessitates political differentiation; ii) at the trans-state level, where interaction occurs between adjacent areas separated by state borders; and iii) at the inter-state level, where common features are conducive to some integration.[153]

Geopolitically the Arctic is characterised largely, though not exclusively, by extremely low population density consisting primarily of composites of indigenous groups and regional immigrants to the peripheral northern areas of the Arctic states. The major political and economic centres are usually outside the region, hence direction and change in Arctic politics has been dictated to a very great degree by forces external to the Arctic *per se* (Lyck 1991). The recent Canadian experience does not fit neatly into this scenario, however, as the Canadians work towards a greater degree of autonomy for their Arctic indigenous groups. The challenge of the Canadian Federal Government in meeting its legal and moral obligations to its aboriginal (Inuit) communities is slowly and progressively being fulfilled. Through the declarations of territorial governments of Inuvialuit (in 1984) and Nunavut (in 1992, to come into force by 1999), a significant measure of self-government for the Inuit has been achieved.[154]

The major stakeholders in Arctic affairs are the governments - state, regional and municipal; indigenous populations; scientists; industry and environmentalists. Peripheral stakeholders include countries outside the region with specific Arctic interests such as scientific research and resource exploitation. Arctic political conflict commonly involves dichotomies of interest between two or more of these stakeholders and is characterised by multifaceted cleavages like cross-cultural, cross-political and fundamental differences between core values (Osherenko & Young 1989:Ch.6).

To begin this study of the contemporary geopolitics of the Arctic, it is useful to give a brief factual account of each of the Arctic sovereign states.

2.8 The Sovereign Stakeholders

The Arctic comprises eight sovereign states with territory or interests traditionally considered *Arctic*.[155] In the context of this work, these states, plus a range other interested states and groups, are collectively termed *stakeholders*, that is, they can show material, economic or other interests in the past, present and future directions of the Arctic as a region.[156]

2.8.1 Canada

The Canadian Arctic comprises the area known as the North West Territories (including the vast island groups to the north, Inuvialuit and Nunavut) and the northernmost part of the Yukon Territory. The southern boundary corresponds fairly closely to both the tree line and the area of continuous permafrost. In the east this

extends well below the Arctic Circle to the western shore of Hudson Bay in Manitoba Province, the eastern shore of Quebec and the eastern coastal region of Newfoundland. This Arctic area comprises the native cultural region described as 'Arctic' and corresponds with the Inuktitut-speaking family areas of the 'Eskimo-Aleut'. These people are known as 'Inuit' in official Canadian terminology.[157]

Locally-produced maps show the margins of the Canadian Arctic extending to the North Pole. They show Canada's western boundary extending north in a straight line from the border between the Yukon Territory and Alaska (US) to the Pole. The eastern margin, on the other hand, is straight from the Pole to about 88° North, then meanders south, equidistant between Canada and Greenland through Nares Strait, Baffin Bay and Davis Strait. The line south from the top of Ellesmere Island is not described as an international demarcation, therefore it may not represent the application of the sector principle.[158]

Canada has a population of just over 28 million, 77% of whom live in urban areas. Only 1.5% of the total are of aboriginal origin according to a 1986 Census, and the population density of the Arctic territories is less than 0.05 persons per square kilometre (SBS 1994).

Canada is a federation with a ruling Liberal Government based in Ottawa. Regional self-government is vested in the twelve provincial parliaments through a constitution. Canada is a member of the United Nations.

2.8.2 The United States

The United States is a relatively small stakeholder in the Arctic in physical terms, with only about one-third of the US state of Alaska situated north of the Arctic Circle. The US Arctic Research and Policy Act of 1984 defines US Arctic territory as:

> All territory north of the Arctic Circle and...north and west of the boundary formed by the Porcupine, Yukon and Kuskokwim Rivers; all continuous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain.

(Friedheim 1988:496)

Actual US territory is relatively small compared to that of Russia and Canada, consequently the US must rely on the benevolence of other Arctic states, especially Canada, Greenland and its NATO allies, to support their Arctic strategic policies (Young 1992).

The US Arctic comprises two distinct indigenous populations - Indian (Athapaskan) and Eskimo (primarily Inupiat). The latter are known as the 'Alaska Eskimo' in official Alaskan terminology (Government of US 1992a:5).

Alaska is the largest of the US states, covering over 1.5 million square kilometres, yet has the third lowest population. Washington, D.C., the US capital, is on the eastern side of the continent several thousand kilometers south of the state of Alaska and the US Arctic territory.

The US has a presidential democratic government comprising a senate and house of representatives. The sovereign integrity of the 50 regional (state) governments is protected under the Constitution. The United States is a permanent member of the United Nations Security Council.

2.8.3 The Russian Federation

Since the breakdown of the Soviet Union in 1991, the Russian Federation has assumed the legal position as successor state.[159] It is the only state of the former Union with an Arctic border – its 8,000 km long coastline. The former USSR, like Canada, had applied the sector principle (see p.108) in delimiting its polar boundaries, albeit unofficially (Shusterich 1984:257).

The Russian political machine is in a disturbing state of chaos at the present time and it is therefore difficult to provide an accurate and up to the minute account of Russian domestic affairs. More is becoming known about the kind of bureaucracy which existed prior to the break-up, however, and it is this information that outside governments and researchers must rely upon for analysing and assessing the state of affairs in Russia today. For instance, it is known that as a result of the 1991 constitutional revisions, each Republic claimed control over the management and protection of its environment, while unfortunately inheriting the consequences of past denial by the Soviet central government of environmental pollution and local issues (Boston College 1992:486). The Russian regions of Magadan, Khabarovsk, Kamchatka, Chukotka and the Jewish Autonomous region are members of The Northern Forum - a municipal polar council.

Russia has a population of nearly 150 million and its northern regions are home to a variety of indigenous people, including Inuit on the eastern fringe and Sàmi on the western fringe.

Russia is a presidential democracy with a federal constitution adopted in December 1993. It has a bicameral assembly comprising the Federation Council and the State Duma. The Federation administers 21 republics, one autonomous region (Jewish oblast) and 10 autonomous areas (okrugs). The capital, Moscow, is in the far central west. The Russian Federation inherited the former USSRs position as a permanent member of the UN Security Council (SBS 1994).

2.8.4 Finland

The Finnish Arctic comprises the Sámi homelands of the districts of Enontekio, Inari, Utsjoki and Sodankyla, collectively called Lapland. Almost all of Finland is above 60° North. Finland has a population of just over 5 million, of whom only between 2000 to 4500 are ethnic Sámi (SBS 1994).

Finland's principal industries are timber processing and metallurgy. It is a presidential democracy with a unicameral assembly (the Eduskunta) and the reigning president is a Social Democrat. The capital, Helsinki, is on the south coast. Finland is a member of the United Nations.

2.8.5 Norway

The Norwegian Arctic comprises the counties of Troms, Nordland and Finnmark, the island of Jan Mayen and the islands of the Svalbard archipelago over which Norway asserts sovereignty through the 1920 Treaty of Spitzbergen. These are the traditional homelands of the estimated 20,000 Sámi people. Norway has a total population of 4.3 million (SBS 1994).

Norway is highly industrialised and its main export earnings are derived from petroleum, gas, ships, fish and pulp and paper.

The country is a monarchy with a prime minister and a bicameral assembly (the Storting) comprising an upper and lower house. The capital, Oslo, is in the south. Norway is a member of the United Nations.

2.8.6 Sweden

Although Sweden has no Arctic coastline, the northern-most region of the district of Norrbottens, comprising 15% of the country, is above the Circle. The people who live here are also Sámi, related to the Sámi which inhabit areas right across the top of

Scandinavia into western Russia. Sweden has a population of 8.7 million, of whom only 15-17,000 are Sámi.

Sweden has very rich mineral reserves, including uranium and iron ore, which contribute to its lucrative manufacturing sector.

Sweden is composed of 24 counties under the administration of a parliamentary democracy. The monarchy plays a ceremonial role only. It has a unicameral assembly (Riksdag) headed by a prime minister. The capital, Stockholm, is in the south-east. Sweden is a member of the United Nations.

2.8.7 Greenland[160]

All but a tiny portion of the huge continent of Greenland, which covers nearly 2.2 million square kilometres, is above 60° North. A thin coastal fringe representing less than 7% of the continent is ice-free. Greenland is a unique Arctic state in the sense that it has a Home Rule government under a Danish master. The Danish government granted domestic autonomy to Greenland in 1953 but retained control of its foreign policy and international relations. Denmark is represented in Greenland by a High Commissioner while Greenland itself has a domestic prime minister.

The US maintains an air base at Thule, at about 76° North on the west coast. Fishing is the principal economic activity for Greenland's estimated 58,000 people, the majority of whom are Eskimo (Kalaallit). The capital is Nuuk, located in the south west. Greenland is represented by Denmark in the United Nations.

2.8.8 Iceland

Iceland is an active volcanic island which is traditionally considered an Arctic nation although its entire land mass is below the Circle. Its population of 270,000 is primarily native Icelandic.

Iceland is a presidential republic with a prime minister and a bicameral parliament (Althing). In 1985 Iceland and its 200 nm exclusive fishing zone were declared to be nuclear-free by the Althing. The United States maintains a NATO military base at Keflavik, close to the capital, Reykjavik on the southern coast.

Half of Iceland's GDP and 75% of its export earnings are derived from the fishing industry (including whaling). Iceland left the International Whaling Commission and

jointly formed a pro-whaling organisation, the North Atlantic Marine Mammals Commission, in 1992.[161] Iceland is a member of the United Nations.

As indicated earlier, one of the most obvious characteristics underpinning Arctic inter-state relations is the presence of the two superpowers, Russia and the United States, in the polar north. The world may never know how close it came to nuclear warfare at the height of Cold War. Presumably either nation could have initiated a nuclear attack against the other at any time. Presumably also they still have this capacity. Why this has *not* happened is not so much the issue here. What this study is more concerned with is how the tenor of Arctic state relations has been shaped by the fact that the Arctic was the strategic theatre for superpower posturing and activity for so long. In fact it still is, in the sense that total demilitarization is both unrealistic and unwise and complex alliances still exist. The geostrategic alliances between the Arctic 8 is further discussed at point 2.10.

The present-day political configuration of the eight Arctic states has an intricate historical base. A generalized examination of pan-Arctic history will help to illuminate the development of contemporary politics.

2.9 Pan-Arctic History

By the time Europeans discovered the Arctic, the Inuit and other indigenous groups had been in residence for a long time: as early as 7,000 - 10,000 years ago, Palaeo-Arctic hunter-gatherers wandered throughout, pursuing seasonal migrations of game herds and marine mammals.[162] The climate was cooler then and the sea level lower; the unglaciated lowlands of north-eastern Siberia and the ice-free peninsula of Beringia became the heartlands of these nomads.[163] The Arctic Small Tool Tradition supposedly ranged across Siberia, the Canadian Arctic (as the Laurentine Ice Sheet disappeared) and into northern Greenland. Separate cultures evolved as the groups adapted and specialized according to local conditions. They remained completely isolated from the *civilized* European world, however.

Then around 300 BC, during an interglacial period, a Greek explorer claimed to have sailed to a frozen sea somewhere to the north of Scotland. The Greeks named this area after a familiar northern constellation, *Arktos* (the bear). The region was subsequently ignored.

Just past the apex of the warm interglacial period, around the 10th century, the Thule Culture developed. Based on coastal whaling villages which relied on marine

transport, the Thule Culture spread from its origins in the Bering Strait area into Canada and Greenland. Today, Eastern Greenlanders and the Inuit of Alaska can converse with each other (Sugden 1982:192).

The Vikings[164] were the most prominent peoples in later Arctic history. They had a strong maritime tradition developed when the climate was still relatively warm and ship transport was highly sophisticated for the time. These irascible people sailed throughout the Scandinavian Arctic and Europe, as far south as the Mediterranean, plundering, trading and settling along the way throughout the early Middle Ages.

The Swedish Vikings, invited by Slavic and Finnish tribes, established the Russian state in the 9th century. At the same time Norway became unified under Harald I Fairhair in 872, who subsequently established and dismantled colonies at various times in various places. Iceland was discovered by Vikings of Norwegian and Celtic origin in 860 and was inhabited as early as 874. At the same time the Norse Vikings reached the White Sea (Baird 1964:14). Eirik the Red (eventually banished from both Norway and Iceland) discovered land to the west of Iceland around 982, calling it Greenland in a bid to lure potential colonists.[165] A trading colony was formed there in 986 and endured for nearly 500 years. Greenland thus had a strong Scandinavian culture and in 1261 accepted the sovereignty of Norway; similarly Iceland declared allegiance with Norway in 1262 (Sugden 1982:201). However, conflict with the native Inuit, climatic changes (the climate was becoming colder) and the reducing viability of its tradeable commodities saw the settlements in Greenland abandoned by the Norwegians in the middle of the 14th century. In the late 14th century Norway was annexed by Denmark and they remained in union until 1814. Vinland, on the eastern coast of the North American continent (now Newfoundland), was allegedly discovered by the Norwegian Vikings around 1000 AD but for various reasons was considered unsuitable for permanent settlement and largely ignored.

Whaling became a lucrative fair-weather business from the 14th century on in this newly-discovered Arctic region. British, Spanish and Dutch whalers were to provide valuable oceanographic information for the second wave of interest in the Arctic, which spanned the 16th and 17th centuries.

Europeans began to venture north to find an alternative trade route to Asia, with its promise of a haul of rich resources recently discovered by Marco Polo and other overlanders.[166] The quest for the north-east passage[167] by the British and Dutch was also a strategic move to outflank the Spanish and Portuguese, whose fleets controlled the ocean routes of the south.[168] At the same time a north-west passage was sought through the northern islands of Canada.

These times (the 16th and 17th centuries) were characterized by the daring and tragic exploits of man against Nature. Names synonymous with the period include the British Muscovy Company, Chancellor (who established diplomatic relations with Moscow), Frobisher (who rediscovered Greenland), Brunel (a Dutchman who reached the mouth of the Ob' River overland), Barents (who rediscovered Svalbard), Hudson (who explored Spitzbergen and reported the presence of whales), and Davis (who explored the region between Greenland and Baffin Island). Baffin's epic journeys of the 17th century achieved the most northerly point of any of these early expeditions.

The privately-sponsored expedition of Hudson and the mutiny by some of his party at Hudson Bay in 1610 is one of those famous tales of polar adventure, ingenuity and tragedy. In 1670 the Hudson's Bay Company was established under Royal Patronage and there began a continuing conflict between the British and the French. French explorers, Radisson and Groseillers, had been discouraged by their own government and had taken their interest in the resources of the area, especially furs, to the British. There was then a relative hiatus in Arctic oceanic exploration for several hundred years.

The history of the spread of the great Russian empire (formerly Muscovy) rested largely on the use which was made of her big rivers – including the Lena, Yana, Indigirka and Kolyma, as well as the Ob' in the west.[169] During the reign of Ivan IV (Ivan the Terrible) in the late 1500s and through to the middle 1600s, the Arctic mouths of these great rivers were reached by Cossacks and Siberian tribes in the pursuit of resources for the rich fur trade. From 1581-84 Yermak and his team of 800 men crossed from the west into eastern Siberia, conquering and building settlements along the way. In 1619 the authorities in Moscow closed the fur-trading port of Mangazeya, a focal point in easterly travel, thereby protecting Moscow's control over its fur resources by effectively freezing out foreign ships (Armstrong 1992:34). In the west the Great Northern War was fought from 1700 to 1721 and involved, among other actions, incursions into Finland and Sweden by Russia.

One of the most significant phases of Russian exploration was during the Romanov Dynasty, which is generally credited with having *Europeanized* Russia.[170] Tsar Peter I (Peter the Great) established the Great Northern Expedition of 1725 to 1742. With Vitus Bering (a Dane) as leader of one group, these journeys consolidated almost the whole of the Russian empire from west to east, including what is now the US State of Alaska and the Aleutian Islands.[171] The latter two areas became rich whaling and

sealing grounds. Because of security restrictions, the results of this Expedition were not published for over 200 years (Armstrong 1992:35).

Baron Wrangel's 1821 sledging journey filled in the missing link (that is, that there was no land bridge between the eastern extent of Russia (Chukotka) and Alaska). Wrangel's discoveries also proved conclusively that there was indeed a navigable north-east passage. During the reign of Peter the Great, Russia supplanted Sweden as the great military power of north-east Europe, although it was the Swede, Otto Nordenskiöld, who finally achieved the north-east passage in 1879, travelling in his schooner *Vega* from Stockholm to the Bering Strait. Roald Amundsen also travelled the route in 1918-1920.

The advent of more sophisticated techniques enabled the achievements of these early explorers to be extended. Further exploration of the northern polar seas confirmed that no land mass existed inside the Arctic basin. The same zeal that existed in the Antarctic in the great race for the pole was also evident in northern polar history.[172] Englishman William Parry travelled northwards from Spitzbergen in the *Hecla,* over both the ocean and the ice, to reach 82° 45' North (within 800 km of the North Pole) in 1827. In 1893, the Norwegian zoologist and oceanographer, Fridtjof Nansen conceived his now famous plan to deliberately set his expedition adrift in the pack ice. Nansen was inspired by the accidental drift voyage of the *Jeanette*, commanded by an American De Long, a few years earlier. Nansen's *Fram* completed its novel journey in two years. The *Fram* was later captained by Sverdrup in further polar exploration. In 1898, Sverdrup was forced to abort an attempt on the pole and diverted his attention to exploring the northern islands in the Canadian archipelago. American Robert Peary, after two close but unsuccessful attempts, finally reached the North Pole in April 1909.

Information from the early voyages of Barents, Hudson and others led to a surge in whaling and sealing effort by the English, Dutch, Danish, Norwegians, Russians and Germans, particularly around Svalbard (Sollie 1989:16). When stocks were severely depleted towards the end of the 18th century, the location shifted to waters between Greenland and Canada and in Baffin Strait.

In 1745 the British government offered an award of £20,000 for the discovery of the north-west passage. It also offered other financial inducements for outstanding polar exploration. But in 1754 war broke out with the French in the Canadian Colony, resulting in the fall of Quebec in 1759 and ultimately the defeat of the French and their Indian allies. The 1762 Treaty of Fontainbleu ceded all French territory in Canada to the British victors. The exploration of the Canadian north then proceeded, but at a less

frantic pace than that of the Russians in Siberia. Much of this early venturing was sponsored by the Hudson's Bay Company or by independent fur traders based in Montreal, in an effort to gain greater access to fur resources. Important discoveries of the period included the mouths of the Mackenzie and Coppermine Rivers.
The British, having been released from the encumbrances of war, continued their pursuit of the north-west passage by sea. Three explorers, John Ross,[173] William Parry and John Franklin were prominent leaders of voyages which attempted to identify possible routes through the north-west passage. This was actually achieved by the Norwegian, Roald Amundsen, in 1903-1906 by sea, and in the 1920s by the part-Inuit Greenlander, Knud Rasmussen, and his overland expedition.

There followed an air age of Arctic exploration during which time Amundsen, Byrd (the first to successfully fly across the pole), Nobile (an Italian aviator)[174] and the Russian Papanin all made great inroads into Arctic aviation and exploration. The importance of this early aviation was to confirm the viability of trans-polar intercontinental air routes.

As the ingenuity of the explorers increased, polar exploration became more successful. The expeditions began using newly invented equipment and revised techniques based on the experiences of those who had gone before them and most importantly, incorporating lessons from the indigenous people. This also meant that such amateur adventures also became more expensive, and generally required the financial support of governments.

As an aside, it is worth noting that despite the heroism of Arctic explorers, it was neither an easy nor comfortable transition from their points of departure far to the south. Like in the Antarctic, humans were essentially aliens in this environment, with the exception of the indigenous people who had made some physical and cultural adaptations over many thousands of years. This is the basis upon which the indigenous groups today argue for self-determination or at the very least a key role in the political processes of decision-making which affect their lives.

The modern political configuration of the Arctic has its roots in these historical phases of discovery and occupation, with an emphasis on physical connection or *contiguity*.[175] Sugden's evaluation illustrates some inconsistencies between discovery and exploration and the principle of contiguity, however. For example, Russia claimed Franz Josef Land without ever having explored it. Furthermore, the Canadians claimed islands to their north which were in fact discovered by the Norwegian, Sverdrup (Sugden 1982:217). Norway, on the other hand, claimed

Eastern Greenland on the basis of traditional hunting rights but this was ruled on in favour of Denmark by the International Court in 1933.

Modern geostrategic alliances have been formed over several centuries of delicate peace and conflict relationships between the Arctic states. A very short-hand history is presented below in an attempt to clarify the nature of modern geopolitics. It is acknowledged, however, that such representations are limited in both scope and depth.

2.10 Modern Multidimensional Geostrategic Alliances

The 18th, 19th and 20th centuries witnessed consolidation of the political autonomy of the eight Arctic states. The British Colony of Canada, having successfully repulsed the French in the mid-18th century, was increasingly drawn into conflict with the Americans to their south. During the American Revolution (1775-83), Canada became a refuge for thousands of British loyalists from the south, who brought with them a strong anti-American sentiment and bitterness at the expropriation of their property. This was one factor which induced the Americans to attempt to invade Canada in 1812. Over a 30 year period of conflict the boundaries between the two were conclusively drawn. The British Government then granted Canada internal self-government in 1848, while retaining veto over its foreign affairs. The British Commonwealth's common foreign policy survived until 1926 when Canada (along with the Irish Free State and South Africa) achieved curtailment of the powers of their British Governors-General.

During the depression which began in 1929, Canada forged strong economic links with the United States, formalized in joint Trade Agreements of 1935 and 1938. This economic amity later allowed the two North Americans to negotiate a coordinated defence policy for their northern territories. (The American Early Warning System for detecting a Soviet nuclear attack across the Arctic was later based on Canadian soil). Both states also became founding members of the North Atlantic Treaty Organization (NATO). Despite the rapport, US-Canadian relations have often been precarious, particularly during the time of the Vietnam War when thousands of Americans again sought refuge in Canada to evade conscription.

The United States is regarded as an Arctic state for one principal reason: its actual possession of Arctic territory – the State of Alaska. However its profile in the Arctic has been greatly enhanced by its status as a world superpower. This reputation of the

United States was established when it became a British ally during the World War I German offensive against neutral shipping. US President Woodrow Wilson committed troops to the war effort in Europe and later dominated the Paris peace conference. Wilson championed the establishment of the League of Nations, but US participation was subsequently rejected by its Senate. Finding it impossible to remain isolated from world affairs during World War II, the United States was inveigled into a Lend-Lease supply arrangement with its ally, Britain, and later entered the War when its Pacific Fleet was bombed by the Japanese at Pearl Harbour in Hawaii.

The most significant development of World War II, with everlasting implications, was the creation of atomic bombs, which the US dropped on the Japanese cities of Hiroshima and Nagasaki to effectively end the War. That unprecedented destructive capacity became the single most important factor in post-war politics.

The articulation of the Truman Doctrine[176] in 1947 and the Marshall Plan[177] in 1948 set the foundations for a 'cold' war (that is, a war with no large-scale fighting) between the communist Soviet Union and the democratic United States, and their respective allies.[178] The North Atlantic Treaty Organization (NATO) was devised and its Article 5 stated that an armed attack against one or more member nations in Europe or the United States shall be considered an attack against all.[179] The Soviet Union established its own Council for Mutual Economic Assistance (COMECON) in 1949 and announced its formal alliance – the Warsaw Pact – in 1955.[180] The Soviet capacity to produce an atomic bomb, first demonstrated in September 1949, was one catalyst which sent the Cold War spiralling into the history books as the prevailing global political condition of the next four decades.

The most complex and dynamic Arctic-state relationships occurred between Norway, Sweden, Denmark, Greenland, Finland and Iceland. During the 19th century the strong history of unification, Scandinavianism - based on cultural and political traditions - failed.[181] When the Norwegian and Danish Crowns unified in 1380, Iceland came under Danish rule, which also included Sweden, Greenland and Finland. But in the 1814 Peace of Kiel after the Napoleonic Wars, Denmark lost its Norwegian territory to Sweden (Convention of Moss); however, Iceland and Greenland remained Danish. Denmark fought several wars with Germany over its southern territory of Schleswig-Hostein, which had been at various times either under Prussian or Austrian administration, or acquired by a Prussian/Italian alliance in 1866. Denmark ultimately lost Schleswig-Hostein to the German Reich in 1871.[182] The Swedish parliamentary reform of 1866 included a pro-German policy of neutrality. Norway, struggling to implement a foreign policy to protect its shipping interests independent of Sweden's veto, dissolved its union with Sweden in 1905.

Finland had been part of Sweden since the 1323 Treaty of Pähkinäsaari but after Peter the Great defeated the Swedes, Finnish territory was gradually annexed by the Russians. This was confirmed by the Congress of Vienna in 1815. Throughout the 19th century, under Russian sovereignty but with acknowledged basic Finnish rights, a Finnish nationalist movement emerged, with extensive acceptance of both the Finnish and Swedish languages. However, the upper classes, the Swedish Finns, and the 'peoples', the Finns, were in conflict. A Finnish army, established in 1878, was dissolved by the Russian Governor-General in 1899-1904 and Russian became the official language. The Russian Revolution and World War I afforded the Finns considerable opportunity to revoke the former Tsarist decrees, however, and the Finnish popular assembly became a democratically elected body by 1917.

Iceland achieved constitutional autonomy from Denmark in 1903 and full sovereignty in 1918, although still under the Danish Crown. Denmark claimed total sovereignty over Greenland in 1921. The League of Nations accorded rights over Svalbard to Norway in a 1920 Treaty, giving free access to its resources to other nations. Norway obtained sovereignty over Svalbard in 1925.[183]

In 1939, Russia - in a bid to secure a strategic advantage against the emerging Nazi movement - invaded Finland, which had been trying to maintain its neutrality alongside Sweden. Finland lost one-tenth of its territory to the Soviets (1940 Moscow Treaty) and for a brief period a Finnish pro-German faction joined the German assault on the Soviet Union in the hope of regaining its pre-war borders. The Finns were again defeated by the Soviets and entered into peace negotiations with them in 1944. The 1947 Treaty of Paris confirmed the Moscow Treaty's delimitation of the Finnish borders, which deprived Finland of its Arctic coastline and created a Norwegian-Soviet border to the north of the country. In addition a Soviet naval base was established on the Porkkala Peninsula to the south-west of Helsinki, forcing Finland to enter into a friendship treaty with the Soviet Union in 1948. After making the territorial concessions to the USSR, Finland was able to maintain jurisdictional discretion over its airspace (Archer 1990).

During World War II, Denmark was occupied by the Germans and Iceland declared itself an independent republic (1944), although it was occupied by both British and American troops. Iceland became a founding member of NATO in 1949 and joined the Nordic Council in 1953, as did Denmark and Norway. The latter two both made reservations to NATO, however, and prohibited the basing of foreign troops in their territory during peacetime. Later in 1957 they banned nuclear weapons during

peacetime also. Sweden remained armed but non-aligned during peacetime, with a declared position of neutrality during wartime.

All of the 8,000 km long coastline belonging to the former Soviet Union is now contained within the Russian Federation. Its history of expansion and invasion in all territories close to its borders is too long and complex to reproduce here.[184] Russia's northern territories were discovered to contain a rich variety of mineral deposits, including gold, coal, diamonds, nickel, and hydrocarbons. The opening of the Trans-Siberian Railway in 1905 facilitated the expansion of the Soviet economy with the establishment of a network of industrial centres from the Kola Peninsula in the west to the Bering Sea in the east to exploit these lucrative resources. This expansion was so rapid that poorly developed building techniques and improvisations are today one of Russia's greatest headaches in its massive restructuring process. The industrial centres are at once both famous for the magnitude of their output[185] and infamous for the massive environmental damage emanating from their smelters and refineries. Eastern Siberia is also infamous for its slave camps (gulags) of criminals and political prisoners. These *reluctant Siberians* provided vital labour for building the massive industrial infrastructure of the north, and many thousands perished in the process.

Russia developed an extensive maritime fishing and cargo fleet which used the Northern Sea Route.[186] The need for contact with its industrial infrastructure spread along the Arctic coastline and the mouths of the big rivers, saw the Russians excel in the capacity to build and operate sophisticated ice-breakers, the latest of which are nuclear powered. In addition, the formal claim by the Soviet Union to its island territories, especially Wrangel Island in 1924, had important implications with regard to the Law of the Sea Convention. The possession of these island territories allowed the Russian Federation to draw straight baselines and thus claim the Northern Sea Route as 'internal waters' (LOSC Article 8) which were thus subject to its jurisdictional control. In line with ex-President Gorbachev's new policy of openness (discussed in Chapter 4), Russia officially opened the Northern Sea Route for international use in 1991.

The Russian Ministry of Defence published its 'Regulations for Navigation on the Seaways of the Northern Sea Route' as a Notice to Mariners.[187] The regulations specify the coordinates of the NSR (Article 1.2), which is a major enhancement on previous descriptions. They also emphasise safety and protection of the marine environment (Article 2); ice-breaker assisted pilotage to vessels with unqualified or inexperienced crew through designated areas (Articles 3, 4 and 7); civil liability for marine pollution (Article 5); the right to inspect vessels prior to transit (Article 6); and the right of expulsion for breaches of the Regulations (Article 10).[188]

The opening of the Northern Sea Route presented the Russians with a unique opportunity to both expand its industrialization of the north and to earn a valuable income from pilotage fees.

The strategic standing of Scandinavia was considered peripheral during the 1950s and 1960s. However, this was upgraded as the Russian Northern Fleet, which was based on the Kola Peninsula close to the northern Finnish and Norwegian borders, grew in prominence in the next two decades. When Mikhail Gorbachev came to power in 1985, the end of the Soviet hegemonic rein over the Warsaw Pact Eastern bloc was not envisaged. But in a speech in Murmansk in October 1987, President Gorbachev heralded a new thinking in Soviet foreign and defence policy, espousing a new cooperative role for his country in Arctic science, joint resource development and strategic concerns (Archer 1990:26). This speech is elaborated on in more detail in Chapter 4, as it is generally seen as a great stimulus to the regime development process in the Arctic.

Within this political asymmetry, each Arctic State negotiated bilateral agreements with *both* the United States and the former Soviet Union, as well as among themselves, on such matters as commerce and trade, transport and navigation, economic cooperation, strategic military and diplomatic relationships (see the Legal Framework Appendix 5). In this way, while the whole of the region was permeated by the paranoia of the Cold War, Arctic states succeeded in concurrently maintaining both a level of international sovereign integrity and the ability to satisfy domestic political demands.

The superpower competition for arms superiority took military technological expertise to soaring new heights, but at a cost which has been argued to be unsustainable in financial, economic, political and social terms. It is not surprising, therefore, that a plateau would be reached beyond which neither the US nor the USSR could afford to go, and that a re-evaluation of military strategy might focus on more realistic *defensive* rather than *offensive* capabilities. Complete demilitarisation of the Arctic is neither envisaged nor realistic, however. It must be noted that *all* Arctic nations would have been implicated in any superpower military confrontation, because of a variety of factors including those complex alliances mentioned above and the indiscriminate effects of a nuclear holocaust. Therefore the security of the whole region remains an essential characteristic of Arctic affairs, as much as a realistic defence capability remains a priority in the domestic affairs of the rim States.

Recent moves by the former Soviet Republic of Lithuania towards gaining membership of NATO caused ripples of concern throughout the international

community, which saw the West as trying to balance the strategic alliance concerns of former Warsaw Pact members. The Russians objected to what they perceived as a strengthening of NATO through this *partnerships for peace* concept.[189] However, now that Russia has aligned itself with NATO by signing a partnership for peace accord, said to be more advanced that the agreements with other ex-Warsaw Pact states and neutrals, some of these fears may have been mitigated (Archer, pers.comm).

Having determined the historical basis of the present-day configuration of the eight Arctic states, it is also necessary to briefly mention another point with salience to this study. The borders of the eight Arctic states are today largely undisputed. However, because the region is largely composed of marine areas, it is important to note the conflicts which have arisen over delimitation of maritime boundaries.

2.11 The Sector Principle and Jurisdictional Issues

While the sector principle of territorial distribution has been a popular concept, no Arctic state supports it as official policy (Friedheim 1988:494).[190] Joyner notes, however, that the application of the sector principle seems better suited to the Arctic than it does the Antarctic (Joyner 1992:58). The sector principle involves the action of drawing:

> a base line or arc described along the Arctic Circle through territory unquestionably within the jurisdiction of a temperate zone state, and sides defined by meridians of longitude extending from the North Pole south to the most easterly and westerly points on the Arctic Circle pierced by the state...creat[ing] pie-shaped sectors.

(Friedheim 1988:494)

Simply put, straight lines drawn from the reaches of each state's terrestrial mass at the Arctic Circle to the North Pole should, theoretically, neatly apportion the marine Arctic into sectors. Each of the littoral states[191] has sovereign jurisdiction over its territorial lands, seas and airspace, with Russia dominating in area (see Map). However, delimitation of territorial seas and exclusive economic zones, continental shelves, archipelagoes, ice-covered areas, pollution zones, historic internal waters and closed seas and straits used for navigation only with the consent of the coastal states, are some areas of contention uncovered by the 1982 UN Convention on the Law of the Sea and unresolved by the application of the sector principle.

Actual disputed boundaries in the Arctic include areas of the continental shelf, Wrangel Island, the US/Canadian common Beaufort Sea boundary, Canada/US and the North-West Passage, and the Norway/Russia continental shelf boundary in the Barents Sea (Shusterich 1984:243).

Shusterich argues that according to most governments, the '...sector principle is not based on international legal precedents...' and thus provides only limited guidance in determining Arctic jurisdiction (Shusterich 1984:255). The problem is that the Arctic is a *commons* area in the sense that fish, animals and sometimes people migrate across politically defined borders.[192] In addition, pollution - whether it be airborne, marine or river-based, knows no political boundaries. Therefore, even if sovereign jurisdiction is proven, unilateral action is very often inappropriate when seeking remedies to transboundary issues (Friedheim 1988:495).

Not only is unilateral action often inappropriate, but also action by governments alone. As mentioned earlier, there are a variety of non-state stakeholders with Arctic interests. To give further weight to the thesis that sovereignty may be becoming permeable, this study also considers the position of entities other than states in the Arctic policy and law-making process.

2.12 Non-State Actors as Stakeholders

One perspective is that the Arctic will play an increasingly important role by employing innovative initiatives and new patterns of interaction that circumvent or simply by-pass the traditional dominance of the state in international society, with non-state actors central in this process (Young 1992:11). This section looks at some of these stakeholders and their roles in Arctic affairs.

2.12.1 The Northern Forum

The Northern Forum is an international organization whose membership (currently 20) comprises the Governors of the northern regions of each of the Arctic states, plus China, Mongolia, Japan and Korea. It also has an associate membership drawn from universities, special interest groups and the private sector.

This body was formally established in 1991 and has a Secretariat in Anchorage, Alaska. Its agenda, as its name implies, is region-specific. The Forum has a stated list of priority projects which include environmental research and monitoring, wildlife studies, the Northern Sea Route, capital formation in the north, human ecology,

environmental health and health-related issues, east-west air routes and northern housing (Arctic Centre 1992:11).

A significant advancement in the profile of The Northern Forum was achieved in 1993 when it was granted accreditation as a non-governmental organization by the United Nations (The Northern Forum 1994:7).

2.12.2 The Nordic Council

The Nordic Council is another region-specific organization. It was established in 1952 to promote cooperation among the Parliaments and Governments of Iceland, Denmark, Norway and Sweden. Finland became a member in 1955. Greenland, the Faroes and Åland Islands have associate membership status with representatives on the Danish and Finnish delegations. The Sámi people are represented on the Council by a multinational observer delegation, thereby representing the Sámi as a nation rather than as citizens of individual states.

The Nordic Council holds a Plenary Assembly and has a Presidium and various standing committees.

At its International Conference for Parliamentarians on Development and Protection of the Arctic region in 1993, the Nordic Council publicly declared its support for the moves towards pan-Arctic regime building which will be discussed later in this work (Nordic Council 1993:9-10).

2.12.3 The Barents Euro-Arctic Region Conference

The Barents Euro-Arctic Region Conference is the product of a meeting of the Foreign Ministers (or their representatives) of Norway, Denmark, Finland, Iceland, the Russian Federation, Sweden and the Commission of the European Communities which took place in Kirkenes, Norway in January 1993. The Conference was described as a forum to promote stability and progress in the region, in Europe and internationally. Representatives from the US, Canada, France, Germany, Japan, Poland and the United Kingdom attended as observers.

2.12.4 Indigenous Peoples' Representation

There are a range of dependent nation groups within the Arctic, which is home to the Inuit, Indian, Aleuts, Lapps, Altaic and Paleoasian peoples. Some still depend on subsistence activities, while others have been integrated into the industrial economies

of their region (Friedheim 1988:499). Increasing evidence is coming to light that in heavily industrialized areas of the Arctic, the indigenous people and their homelands are gradually being displaced by imported labour and the industrial infrastructure.[193] This has left many local communities without the benefit of their traditional lifestyles: an unskilled workforce relying on the welfare of the state.

The Sámi 'snowmobile revolution' is just one such example. It illustrates the effect of the head-on meeting between traditional ways of life and the technological, market-based economic realities of the 20th century. This interdiction is causing enormous problems for both the people and the policy-makers in the northern Nordic regions. For instance, there is growing pressure on young people to choose between a traditional subsistence means of survival and the lure of capitalist economy wages and consumer goods. Traditional hunting grounds have been either over-exploited by the indigenous people themselves[194] and others, or protected in law, and there has ensued a clash between environmental and humanitarian ethics (Helander pers.comm).

The rights of indigenous peoples are being closely scrutinized by human rights groups as they either strive for survival in an increasingly industrialised North, or attempt integration.

The indigenous groups most politically active in the Arctic include the Inuit Circumpolar Conference, the Nordic Sámi Council and the Association of Small Peoples of the North (a Russian minority group). In much the same way as the Malaysian-led UNGA lobby group sought *participation* in Antarctic affairs,[195] these indigenous groups seek participation in Arctic affairs, based first and foremost on their fundamental rights as circumpolar people. But there is disharmony between and among indigenous groups over many issues, resulting in an inability to unify into a strong single voice in Arctic affairs and thereby losing a measure of legitimacy.[196]

It is not only the Arctic governments which have problems with pan-Arctic solidarity; the inherent differences between and among both the politically-based and ethnicity-based nations make the pursuit of Arctic regimes that much more complicated. Forcing linkages where they should not be forced and denying individualism where it should be acknowledged results in the sometimes patronising or token gestures towards indigenous groups which they do not fail to recognise but are often powerless to stop. Two of the most active and successful indigenous groups are the Inuit Circumpolar Conference and the Nordic Sámi Council and Parliaments.

- **Inuit Circumpolar Conference**

The ICC was formed in Barrow, Alaska, in June 1977 and adopted its formal Charter in 1980. It represents the indigenous members of the Inuit homelands, including such regional groups as the Inupiat and Yupik of Alaska, the Inuit and Inuvialuit of Canada and the Kalaallit people of Greenland. The Inuit from the former Soviet Union were welcomed into the Conference in 1989.

Inuit homelands of Alaska, Canada and Greenland[197] are described as '...those arctic and sub-arctic areas where, presently or traditionally, Inuit have aboriginal rights and interests' (ICC 1980:3).

The ICC has a Secretariat located in Canada which is funded by equal contributions from each member party (ICC 1980:Articles 8 and 9).

In the context of this study it is important to note several of the fundamental purposes of the ICC:

- to ensure the endurance and the growth of Inuit culture and societies for both present and *future generations;*
- to promote long-term *management and protection* of arctic and sub-arctic wildlife, environment and biological productivity;
- to promote wise *management and use of non-renewable resources* in the circumpolar [ie. Inuit homeland] region and incorporating such resources in the present and future development of Inuit economies, taking into account other Inuit interests.

(ICC 1980:Article 2 (e), (f) and (g), emphasis added)

The political message of the ICC from its first conference in 1977 was that it represented: '...one indivisible people with one common language, culture, environment and concerns...and that it is only the boundaries of certain nation states that separates [us]' (Resolution 77-01 in Fœgteborg 1992:243). This sentiment has been carried through into the ICCs Charter and subsequent public statements.

The political awareness and profile of the ICC grew rapidly during the 1980s. The International Whaling Commission granted the ICC observer status in 1980, in recognition of the traditional subsistence harvesting practice of many Inuit communities. In 1983 ICC was granted consultative status by ECOSOC, the UN Economic and Social Council. That same year the ICC established the Alaska Native Review Commission to review the Native Claims Settlement Act of 1971 and began developing an official Arctic policy. In 1985 it established an Environmental

Commission. In 1991 the ICC organized the First Arctic Leaders Summit in Denmark (Fœgteborg 1992:244-5).

Two of ICC's projects are noteworthy. In the document 'Principles and Elements for a Comprehensive Arctic Policy', published in 1992, the ICC provided an extensive view of a range of Arctic policies which, it said, was '...a crucial first step to the full and productive exercise of Inuit self-determination and self-government' (ICC 1992:2). In recognition of the dynamic nature of Arctic affairs, the ICCs Arctic Policy document was to be seen as a *living blueprint*, to be refined and improved with changing circumstances (ICC 1992:148). However, it also contained a warning: 'Unless basic collective and individual rights are respected in the policies and actions of state governments and others, well-meaning initiatives in the Arctic will not be successful' (ICC 1992:3).

The ICC is also in the process of developing a Regional Conservation Strategy. A local application of the World Conservation Strategy produced by IUCN, the Inuit Regional Conservation Strategy was a product of the 1986 ICC General Assembly (Resolution 86-18) and has received praise from the UN Environment Program (ICC 1989). In fact it has been lauded as having become '...a significant force in promoting international cooperation on Arctic environmental issues' (Young 1992:187).

The ICC's Arctic Policy document deals with the environment, social issues, culture, economic issues, education and science, but it also contains generic statements about peace and security issues. One potential area of conflict has been the Greenlandic Home Rule Government's opposition to the ICC addressing Arctic military questions. Theoretically the ICC, as a transnational, non-governmental body, should not be impeded by restrictions on the kind of issues it adopts. In a speech to the 1991 Leaders Summit, the Prime Minister of Greenland warned of the dangers of tackling these subjects, saying they could jeopardize many other positive purposes of the ICC (Fœgteborg 1992:248). It is difficult to see how, or indeed why, the ICC should side-step issues of such great importance to circumpolar solidarity.

The ICC is also hampered by, in Canada at least, a lack of both financial resources and expertise to carry their message into the international diplomatic world. Anecdotal evidence suggests, for example, that poor communication between the ICC and other groups (mainly governmental) active in Arctic affairs had sometimes led to misunderstandings about the aims and intentions of the ICC (Reimer pers.comm.). While the ICC has intrinsic legitimacy, its standing within the Realpolitik world is

another matter. Moreover, these anecdotes suggest a real compromise of its effectiveness.

- **The Nordic Sámi Council and Parliaments**

The estimated 60,000 Sámi people live separately in Norway, Sweden, Finland and Russia but are united ethnically under the slogan: 'we, Sámi, are a people and the national borders shall not divide the community of our people.'[198] Sámi political mobilization has been the product of a generalized trend towards acknowledgment of native peoples' rights post World War II, facilitated by the UN Covenant on Civil and Political Rights, especially Article 27.[199]

The Nordic Sámi Council is an association of Sámi groups from Norway, Sweden and Finland, with its Secretariat and conferences funded by the Nordic Council. These Sámi associations were apparently established with little or no government support, and their main emphasis has been to try to attract both domestic and international recognition of the Sámi as a 'separate but equal people'. (Brantenberg 1991:76). The Council was established in 1956 and is a founding member of the World Council of Indigenous Peoples (WCIP).[200] The Russian Sámi have their own association – the Kolasami – established in 1989.

Both Finland and Norway have Sámi parliaments, and Sweden is considering a bill to establish one. The Finnish Government began to consider a Sámi parliament in 1972 and a trial election was carried out in 1972-73. Finland's Sámi parliament was more formally established in 1975-76 (Brantenberg 1991:78). The Sámidiggi (Sámi parliament) of Norway was officially proclaimed in 1989 through the *Sámi Act 1987*. Only Sámi voters are permitted to participate and only Sámi candidates can be elected to this parliament. The Sámidiggi is granted a mandate, under §2.1 of the *Act*, to include in its area of competence: '...all matters which in the opinion of the Sámidiggi are of particular concern to Sámi people' (Nystø 1991:112). However, the Norwegian Sámi Parliament is primarily a consultative body. There are considerable restrictions on its authority to pass measures in any issue area other than education and research, trade and industry, nature and the environment, rights, social affairs and health, culture and language and organizational and constitutional affairs (Nystø 1991:113).

2.12.5 Environmentalists

The rise in prominence of environmental NGOs in the Arctic has been viewed as challenging the legitimacy of traditionally closed decision-making at both the state and international levels (Stokke 1992:228). There are a range of environmental groups

operating in the Arctic, including the Norwegian group Bellona[201] and Greenpeace International, which is based in Amsterdam. Greenpeace in particular has been a strong and active campaigner in the European Arctic, and two current issues which they have taken a particular interest in are the dumping of radioactive wastes by the Russian Federation and the Norwegian whaling issue.

Greenpeace became aware of persistent but unconfirmed reports that the Soviet Union had been dumping radioactive wastes at sea from the 1960s. It had repeatedly voiced its concerns over these activities to the Consultative Meetings of the London Convention.[202] With regard to the dumping of radioactive wastes in the Sea of Japan (off the northern island of Hokkaido), Greenpeace accused the International Atomic Energy Agency (IAEA) of impropriety by knowingly allowing the Russian Federation to breach the provisions of the London Convention, particularly Articles I and II regarding protection of the marine environment.[203] The so-called 'aggressive attitude' of Greenpeace International has apparently been questioned on several occasions; however, Greenpeace still continues to lobby the London Convention.[204]

Greenpeace later conducted a limited joint survey to assess the environmental impact of illegal dumping operations. The study, conducted in April 1994 (the results of which were unavailable to the author) involved collaboration with the governments of the Russian Federation, Japan, the Republic of Korea and the IAEA.[205]

Greenpeace is also active in the International Whaling Commission.[206] In 1992 Norway clearly signalled to the rest of the world (via the IWC meeting at the time) its intention to recommence whaling operations in 1993, and to resume scientific whaling immediately.[207] Greenpeace swiftly launched one of its now famous anti-whaling direct action campaigns, which was successful in interrupting the hunt. Greenpeace has voiced speculation that Norway's decision to resume whaling was a political vote-gathering exercise, aimed at protecting the sustainable lifestyle of traditional whaling villages (and thus guaranteeing their vote) rather than a decision based on the best scientific advice.[208]
Greenpeace International, its presence legitimized by being granted observer status in many international fora, continues to play a high-profile, active role in Arctic affairs.[209]

2.12.6 Industry as Stakeholders

Hydrocarbons, minerals such as copper, nickel, phosphates, gold, silver, cobalt, iron ore, coal, diamonds, tin, lead and zinc, timber, water for hydro-electric generation, marine living resources and indigenous labour are all commercial commodities of the

Arctic. Throughout the 1970s and 1980s there was an increasing focus on these vast natural resources, both living and non-living, renewable and non-renewable and the growing technological capacity to exploit them commercially. Their cost, in both economic and political terms, is their most crucial feature.

Hydrocarbons in particular are of substantial importance to the domestic and foreign earnings of the United States, Canada, Norway and Russia. While actual estimates vary, the consensus is that recoverable reserves of hydrocarbons in the North American Arctic and gas reserves in north west Siberia are *enormous*. Similarly, Arctic fishing accounts for an estimated 90% of the total Icelandic fish-catch and the Alaska pollock industry was said to be the largest single-species fishery in the world.[210] But while some resources like oil and fish have proven to be profitable over time and in favourable market circumstances, concerns over extraction and processing methods, transportation, harvesting practices and the variability of markets are raising critical questions of a political as well as an economic nature.

The industrialization of the Arctic from undeveloped lands far removed from their markets and with little or no infrastructure into economically viable, self-sustaining industrial regions has in some cases crashed head-on into the environmental movement and indigenous groups, which see this expansion as conflicting with both environmental concerns and traditional native rights (Osherenko & Young 1989:51-2). The Arctic Pilot Project was one such test case which illustrated the wide discretionary powers of government bureaucracies over the use of Arctic resources and the catalytic role NGOs have played in northern environmental and developmental questions.[211]

- **The Arctic Pilot Project**

The Arctic Pilot Project (APP) was initiated by a consortium headed by Petro-Canada in 1976, as both a stimulus to Arctic development and as an additional energy source for Canada. It was designed to test the feasibility of producing natural gas from wells in the Canadian Arctic islands and transporting it 160 km overland in a buried pipeline, chilled to stop thawing of the permafrost through which it would travel. The gas would be transformed into liquefied natural gas (LNG) and shipped by icebreaking carriers through Baffin Bay and Davis Strait (which separate Canada from Greenland) to a regasification plant in southern Canada. The transport was to take place on an year-round basis. The two icebreaker transporters were to be revolutionary in design, recycling the boil-off of their gas cargo into fuel for the ship's gas turbine/electric propulsion systems. Specially reinforced double hulls would lessen the chances of rupture of the forward LNG tanks during icebreaking activity. The shipping route through the north-west Passage to ports in either Nova Scotia or Quebec was carefully chosen after years of study of ice data. The spin-off for the Canadians would be that

western Canadian gas would be made available for export, instead of having to be piped east to supply energy needs there.

A submission by Petro-Canada and its partners was required to be sent to three different Canadian Government departments - the National Energy Board and the Federal Departments of Transport and the Environment, the latter to hold detailed hearings through its Environmental Assessment and Review Process (EARP) (Petro-Canada 1980). Petro-Canada's application involved three crucial phases: i) the construction of the natural gas pipeline and liquefaction plant on Melville Island; ii) the transport of the LNG to eastern Canada; and iii) the export of natural gas to the United States. Petro-Canada's application did contain a strong emphasis on the *pilot* nature of the project.

The EARP hearing process began in 1980 in the four Arctic communities of Resolute Bay, Arctic Bay, Grise Fiord and Pond Inlet. In its report on the northern component of the APP, the Environment Assessment Panel concluded that while it had some reservations, overall the project was environmentally acceptable. The Panel therefore made its recommendation to proceed conditional upon the establishment of a shipping control authority and the conduct of on-going and further research, to be guided by the advice of both the Inuit communities and Federal scientists.[212]

After years of submissions, hearings, delays and counter-tactics by a variety of interest groups, the Arctic Pilot Project was unceremoniously dumped.[213] Petro-Canada's 1983 Annual Report simply stated that: '...a number of projects which had appeared viable in a higher energy price environment but which could no longer be sustained were discontinued or deferred.'[214] The APP was *deferred indefinitely* after Petro-Canada and its partners had spent over Can$58 million up to 1982 (Petro-Canada 1983; Petro-Canada 1982:10). According to the Canadian Association of Petroleum Producers (CAPP), the deflated international market price of oil and gas was the principal reason why the APP was deferred. The four-tiered bureaucratic jurisdiction[215] and the lengthy environmental evaluation process and subsequent restrictions accounted for only a small percentage of the reason (Brouchet pers.comm). However, according to a representative of the Inuit groups involved in the hearings, *their* pressure was responsible for bringing the project to a standstill (Fenge pers.comm). In fact, the Inuit Circumpolar Conference claim the mothballing of the APP as one of their prize scalps (Fœgteborg 1992:244-5).

- **The Arctic as a Market and a Resource**

There have been several important external factors which have strengthened the potential of the Arctic as a resource-base in both political and economic terms. The

OPEC oil crisis of the 1970s was cited in Petro-Canada's 1976 Annual Report as a major concern for Canadian energy policy (Petro-Canada 1976:16). In 1988 it was estimated that 40% of all US oil reserves were located in the US Arctic (Friedheim 1988:497). Similarly the Iraqi War of 1991 reinforced the need to strengthen self-sustainability of hydrocarbon production by North America.

Another important set of factors in Arctic affairs is the intra- and inter-regional economic and political linkages between Canada and the US, and between the Nordic Countries and the European Community (EC).

The US and Canada have a free trade agreement, concluded in 1988 and extended in 1991 to include Mexico, in what is now the North American Free Trade Association (NAFTA).[216] NAFTA was a contentious issue with many Canadians, notwithstanding their strong connections to the US. The US is Canada's major trading partner, representing 75% of export earnings in 1990 (SBS 1994:105).

Similarly in Scandinavia, the transition into union with the EC has been a contentious issue. Denmark has been a member of the EC since 1973. Norway attempted to join also in 1973 but its referendum was rejected by the people. Sweden and Finland considered that their neutrality might be compromised, as the EC was seen as essentially a *western* organisation and neither therefore sought membership. Iceland rejected membership because of the EC's Common Fisheries Policy. Instead, Norway, Sweden, Finland and Iceland negotiated separate Free Trade Agreements (Laursen 1993:115-18). These agreements were seen by the Nordic countries as being less restrictive than full and committed integration into the larger European unit because of their more modest intergovernmental cooperative nature and minimalist institutional character (Laursen 1993:119).
Possibly as an alternative to European Community membership, in 1989 the EC offered the EFTA partners (including the Nordic countries) a different package - a more structured partnership with common decision-making and administrative institutions, but with retention of full decision-making autonomy. This would become known collectively as a European Economic Area (EEA) with two factions - the EC and the EFTA countries, and be finalised in 1992 (Laursen 1993:123-4).

A parallel development was the concept of comprehensive European Union through the Maastricht Treaty. The four freedoms of the EC's internal market programme[217] were extended into the Maastricht Treaty on European Union, which also contained the potential to deal with issues such as a common environmental policy alongside democratic legitimacy, common foreign and security policy, European citizenship, common social policies and an enhanced European Community (Laursen 1993:116,

127). The debate regarding the application of this *community* method of regional integrated problem-solving will not be elaborated here. What is important to note, rather, is the attitude of the Nordic countries to Maastricht and the consequences for Arctic affairs.

One of the most obvious areas of concern was the planned common foreign and security policy (CFSP). In a survey following the Danish referendum's rejection of Maastricht in June 1992, the apparent perception was that the Treaty represented a considerable loss of political autonomy. Despite admissions by some Danish voters (45%) that they had little or no knowledge of Maastricht, a common defence policy was favoured by only 30% of Danes, common citizenship by 13% and only 19% favoured a United States of Europe concept. However, the internal market programme received majority support (74%) (Laursen 1993:129). It appears that while the Danish government wanted Maastricht, the people did not. A compromise which allowed the Danes to opt out of all questions relating to common judicial, strategic and military policies was agreed to in what is known as the Edinburgh Decision by the EC in late 1992. The subsequent May 1993 referendum narrowly secured Denmark's ratification of Maastricht.

Perhaps facilitated by Eastern European disintegration, the other Nordic EFTA countries acquiesced: Sweden applied for EC membership in July 1991, Finland applied in early 1992 and Norway in late 1992; all were subject to domestic support, however. Following successful referenda, Finland and Sweden joined the Union in January 1995. Another Norwegian domestic referendum was held on 28 November 1994 and the Norwegians again rejected Union. Iceland too is still out in the cold alongside Norway (Laursen 1993:133).
It is interesting to note that the Sámi of Norway, Sweden, Finland (and perhaps Russia) have proposed that their homeland be treated as an autonomous economic region with regard to the EC (Helander pers.comm).

2.12.7 The Scientific Community as Stakeholders

The Arctic scientific community are major players in Arctic affairs and by implication, major stakeholders. Their role in bringing into existence an Arctic scientific organization and their part in the emerging Arctic eco-management regime is such that they deserve special treatment in this work. Accordingly, the Arctic case study, presented in Chapter 4, will describe the genesis of the Arctic scientific organization and its implications for the future direction of the hitherto absent Arctic regional environmental management regime.

2.13 Conclusions

What does the information presented here mean in terms of global ecosystem responsibility measured through the legitimacy, effectiveness and accountability of polar eco-management regimes? This Chapter has been structured in such a way as to highlight the major differences and similarities between the two regions. For example, in the Antarctic it has largely been events like discovery and occupation leading to continental partitioning and the cooperation of the IGY leading to the Antarctic conference which have shaped the nature of multilateral responsibility for the polar ecosystem. In the Arctic, however, the historical process of state-building has led to the determination of eight major stakeholders which for the most part act unilaterally in polar concerns. This Chapter has not taken account of the domestic politics of the Arctic 8 nor their environmental agencies. Rather, it has described the very long and complex historical process of both nation- and state-building in the Arctic. Importantly it has identified the fact that no states exist in a vacuum of sovereignty. There have been a number of dynamic forces, particularly wars (or the threat of war) and economic imperatives, which have impinged politically and economically on a state's existence and independence, shaping its foreign policy directions towards other states. In presenting the above geographical and geopolitical architecture of the polar regions, the intent of this Chapter has been to put the Antarctic and the Arctic in a modern context.

At the outset it was noted that there are few similarities and many differences between the poles as regions and regimes. The most prominent similarities and differences identified in the study so far are as follows:

- **The Peripheral Locus of Decision-Making**

The centres of authority for Arctic policy- and law-making are located far to the south of the polar regions of the eight rim states.[218] Furthermore, the Antarctic is uninhabited apart from a transient population of scientists and logistics personnel, tourists and Southern Oceans resources harvesters. It will be shown in the next chapter that the Antarctic Treaty System's policy- and law-making machine does not have a secretariat and is therefore located within the government bureaucracies of each participating state. The machine only becomes a coalition at Antarctic Treaty Consultative Party Meetings.

This raises interesting questions about the relevance of environmental law which may be determined by outsiders[219] in the case of the Arctic; and in the case of the Antarctic,

where those laws have no direct physical impact on the states making them.[220] The second part of the case studies will take up these questions in more detail.

- **The Transitional Nature of Polar Sovereignty**

According to Principle 21 of the Stockholm Declaration on the Human Environment (discussed in Chapter 1), sovereign states have the right to exploit resources within their jurisdiction, providing there are no unwanted transboundary effects. In the case of the latter, a state's sovereignty should not shield it from environmental obligations. While the eight rim states of the Arctic basin have almost total sovereign jurisdiction over the Arctic region, other than the high seas, only inchoate claims exist to Antarctic territory. Logic would seem to suggest, therefore, that the Arctic states should have a more advanced environmental ethic than those states responsible for management of the Antarctic. Because they are the sovereign owners of their territory, everything that happens in the Arctic directly or indirectly affects some or all Arctic states. In the Antarctic, by contrast, the possibility that claimant states *might* have their territorial claims universally recognized at some point in the future would not seem a likely enough reason to take good environmental care of their claimed territory now. But the opposite has, in fact, been true. This has been due in large measure to the prominence in the Arctic of Cold War tensions and the diplomatic retardation such a situation has perpetuated. But the Cold War is now over.

The Arctic states have proven sovereign title but the Antarctic claimants have not. The Antarctic sovereignty issue has been temporarily set aside through Article IV of the Antarctic Treaty. Therefore, different treatment of essentially the same problem – that of ecosystem protection – is indicated.

Furthermore, the intent of the UNCED's Agenda 21 to establish a global partnership should not be taken literally.[221] Rather, a more plausible interpretation is that states or regimes will operate regionally or locally for the long term benefit of all humankind (or, as this work advocates, all living things). In this sense, the *global partnership* is likely to be more a philosophical or conceptual notion than a pragmatic arrangement.

The Arctic case study will show that there *are* growing indications that the Arctic nations are creating a new *Arctic* order by placing increasing emphasis on environmental issues. This is evidenced by the existence of several new institutions and initiatives charged with pan-Arctic cooperation and is facilitated in part by the opportunity for post Cold War communications with the industrial centres (Russian, English, Asian and European) largely responsible for much of the transboundary pollution.

It is not, however, a cause for euphoria. Old rivalries, customary reticence, intransigence, political uncertainty, new stakeholders and traditional ethnic groups seeking empowerment, all combine to make the pursuit of a resistant multilateral Arctic eco-management regime more complex and problematic. The concepts dealt with here in this study - ecosystem responsibility and international cooperation - are first and foremost political decisions.

Other factors which have contributed to the complexity of Arctic environmental protection include insufficient scientific knowledge regarding the physical and biological processes, technological poverty and political inability to regulate the industrialization of the Arctic (Stokke 1991). Added to these are the conflicting interests of indigenous people and state governments, market forces, and the frequency and efficacy of the challenge from exogenous forces such as environmental non-governmental organisations. Disagreement over the degree to which Arctic resources are shared resources is another important variable. So too is the lack of a suitable forum and procedural and legal mechanisms for securing commitment, compliance and liability.

How much the notions of sovereignty and security may be undermined by the ecological imperative - or conversely, how state's rights with regard to sovereignty and security may be used to subvert the ecological imperative - are issues which will be attended to in the case studies.

- **The Nexus Between Polar Science and Polar Politics**

Science has played a prominent role in the historical development of both polar regions. Much early exploration was science-driven and in some cases (especially the IGY) cooperative science was able to endure in a climate which fostered little in the way of international cooperation on other issues. By identifying such features as visible and potential physical damage to vulnerable ecosystems and risks to human health and welfare, the communities of polar scientists have successfully assisted in increasing the international profile of the polar regions, albeit within the specific dimension of science.

Moreover, advanced scientific knowledge is attracting greater legitimacy in policy formation. It is therefore incumbent upon the polar states to make appropriate ecological policy choices from the best available scientific information.

In conclusion, it is safe to say that in the case of the Arctic, the Cold War political climate was not conducive to the development of a pan-Arctic environmental ethic, as the priority of the Arctic states was to preserve their economic and political autonomy.

But with the declaration of the end of the Cold War has come a measure of commitment to the resolution of environmental concerns never before experienced in Arctic affairs. This may well be an accidental by-product of a trend towards regional harmonization for the purposes of economic advantage, research and development interests. It may also be, to some extent, a *natural* progression as states become more seriously affected physically, economically, politically and socially by transboundary environmental concerns, as identified by the scientific community. Lastly, it may also be the product of changing values as the ecological debate becomes more informed and the stakeholders more empowered.

A different situation prevails in the Antarctic. Scientific programs have a dual function: on the one hand they produce valuable scientific information, often through cooperative joint ventures; and on the other, they also give the Antarctic Treaty claimant states a legitimate presence in the region - an undisguised assertion of sovereignty.

While the problem of ecosystem management is common to both polar areas, only the Antarctic has had a suitable regional management infrastructure for comprehensively addressing the issue. The Antarctic Treaty System has been in existence for over 35 years and the coalition of states have at their disposal the existing mechanisms within the Treaty System for cooperation towards achieving ecosystem protection. The Arctic nations, on the other hand, have a fragmented array of mainly bilateral agreements concerning the environment. Furthermore, these *ad hoc* policies have obviously been seen as insufficient regional protective mechanisms, as ecosystem degradation is continuing and in some cases increasing.[222] There is only one multilateral regional initiative specific to the Arctic – an agreement about the protection of Polar Bears. Just prior to the end of the Cold War, however, the former Soviet President Gorbachev acknowledged that the Soviet Union sought regional discourse on such issues as environmental management and scientific cooperation. This encouraged the Arctic states to begin a process of regional cooperation, the level of which has never before been experienced in Arctic affairs. But because no pan-Arctic forum was in place to facilitate political cooperation, the northern polar states have had to begin from scratch.

The next two chapters continue the case study examinations, in the context of the historical development and the nature of laws which determine a level of responsibility for polar ecosystems. In the following case studies, the analytical framework will be applied in order to measure the analytical parameters.

3

The Antarctic Treaty System

Introduction

Nowhere is ecological interdependence more widely studied than in the Antarctic and nowhere is the issue of sovereignty handled with such artifice. Environmental protection, if not strictly with an ecosystem approach, was on the agenda of the very first Antarctic Treaty Consultative Meeting (ATCM) of 1961. This is rather remarkable considering that the Meeting pre-dated Carson's Silent Spring and the genesis of modern environmentalism. The Parties at that first meeting recognized an '...*urgent* need for measures to conserve the living resources of the Treaty area and to protect them from uncontrolled destruction or interference by man.'[223] There is ample evidence throughout the documented history of the Antarctic Treaty System to indicate an evolutionary approach to environmental protection in the Antarctic.

The environmental agenda of the Antarctic Treaty Parties was considerably broadened in the following three decades by virtue of the Treaty – the primary international legal instrument guiding the administration of the Antarctic.

The Treaty and its system of Antarctic administration has set aside sovereignty questions in order to govern and direct a variety of human activities from the behaviour of expeditioners to the sustainable harvest of Southern Ocean resources. The system is lauded as an example of adaptability, endurance and success in terms of international cooperation. It is also criticised as lacking effectiveness and the ability to protect the interests of the international community in the Antarctic.

This Chapter seeks to determine what characteristics the System has which attracts such acclaim and at the same time such criticism. It begins by investigating the period of evolution of the System from its rudimentary beginning through to the acceptance of the Madrid Protocol on Environmental Protection in 1991. This 30 year period

corresponds with the development of an international environmental conscience and is portrayed as an era in which the System evolved, adapted and changed according to altered perceptions of the unusual and highly prized environment of the Antarctic.

The chapter then examines the notion that while the historical placement of the Antarctic Treaty is useful in understanding the content of the parent agreement, of more pragmatic benefit in analytical terms are the provisions of the Treaty and its subsequent embellishments. These are thought to be of greater assistance in understanding the nature of Antarctic ecosystem management today in the context pursued in this study.

3.1 The Antarctic Treaty System

In this study the Antarctic Treaty System (ATS) refers to:

> ...the Antarctic Treaty, the measures in effect under that Treaty, its associated separate international instruments in force and the measures in effect under those instruments.

This description, formalized by the Antarctic Treaty Parties themselves in Article 1 of the Madrid Protocol to the Treaty, was chosen in order to bypass what could be a lengthy and only marginally relevant discussion on the various meanings of the word *system*.[224]

The Antarctic Treaty System is composed of three tiers of law: international legal obligations through binding agreements; less formal yet no-less important rules and regulations originating from meetings of the Parties; and the domestic enabling legislation of the Parties as sovereign states. This study concerns itself with the first two tiers only as the assumption is that they would not be in force without their implementation through domestic laws.[225]

The Antarctic Treaty[226] is the foundation of the System, which also includes the Agreed Measures for the Conservation of Antarctic Fauna and Flora[227], the Convention for the Conservation of Antarctic Seals[228], the Convention on the Conservation of Antarctic Marine Living Resources[229] and the Madrid Protocol on Environmental Protection to the Antarctic Treaty.[230] In addition, the Parties to the Antarctic Treaty have negotiated a Convention on the Regulation of Antarctic Mineral Resource Activities[231], which did not enter into force.[232] The System also includes sundry in-house meeting recommendations, the content of which may not be covered in the other more formal instruments of the System.

This System is embedded into the wider international legal system which comprises a range of regimes covering many subjects with relevance to the Antarctic. These include treaties on the marine areas, transboundary environmental pollution, climate change, atmospheric protection and the like, along with the soft law norms and principles which underpin international law generally. The relationship between the various regimes is shown in Figure 3.

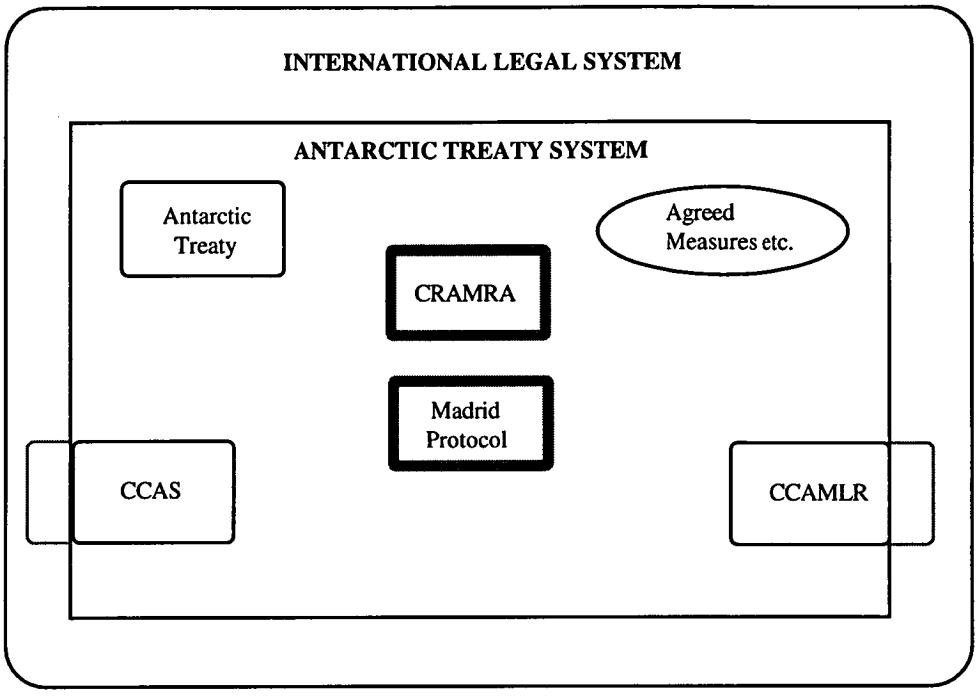


Figure 3. The Placement of the Antarctic Treaty System Within the International Legal System

This Antarctic legal regime did not develop in isolation from wider international legal regimes and must therefore be viewed in the context of the System being a component of the international legal order. It is important to note the cross-over into the international legal system of CCAS and CCAMLR, both of which allow for participation by states not party to the Antarctic Treaty. It is noted also that the Madrid Protocol and CRAMRA are not in force. The Agreed Measures and other Meeting Recommendations are contained wholly within the Antarctic Treaty System and do not cross over into the international realm.

Each of these components of the System will be described in brief in order to illustrate the progressive development of an ecosystem management regime for the Antarctic and the corresponding dynamics of the ATS.

3.1.1 The Antarctic Treaty

The Antarctic Treaty was drafted in 1959 and entered into force in 1961.[233] The Treaty evolved before a strong environmental ethic was established within the international community, consequently it contains little in terms of holistic ecosystem management principles. However it will be shown that the Treaty has proved to be both robust and flexible enough to expand upon the scope of its original, rather rudimentary principles. In this sense the Treaty has been able to embrace ecological imperatives on a needs basis, albeit over a 35 year period. Importantly, the parent document contains a unique compromise on the issue of sovereignty by virtue of its Article IV, which has facilitated its growth into a system comprising a range of legal regimes dealing with the administration of the Antarctic by a disparate group of sovereign states.

The Antarctic is, first and foremost, the world's only nuclear free, demilitarized zone. The Antarctic Treaty states specifically that: 'Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord' (Preamble). This is reinforced in Article 1 which expressly prohibits military activity (with the exception of logistic support for scientific activity) and Article V, which prohibits nuclear explosions and the disposal of nuclear waste. There is a nexus in Article V.2 to any international law which is concluded to deal specifically with the nuclear issue. Indeed the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (agreed to 30 years after the Antarctic Treaty) has done just this by prohibiting absolutely the export of hazardous wastes to the Antarctic Treaty area south of 60° South.[234]

The nucleus of the Antarctic Treaty is found in Article 2:

> Freedom of scientific investigation in Antarctica and cooperation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty.

This reference to the IGY indicates acknowledgment by the Treaty Parties of the importance of both the science and the cooperation fostered by that event. Freedom of scientific investigation is cardinal to the operation of the Antarctic Treaty and is protected in all of the System's subsequent instruments.

Article VI of the Treaty protects the freedoms of the high seas. A huge expanse of the Antarctic Treaty area (that is, south of 60° South, pursuant to Article VI) is high seas

and via this Article such international law as the United Nations LOSC, the International Convention for the Regulation of Whaling (ICRW), the International Convention for the Prevention of Pollution from Ships (MARPOL), the Convention on the Prevention of Pollution by Dumping of Wastes and Other Matter (London Convention)[235] and others are connected to the Treaty as external factors. This all provides some measure of protection for the Antarctic marine ecosystem, but is only binding on States which are party to either the Treaty or to these external agreements or in some cases, both.[236]

The Parties to the Treaty are mandated to consider making environmental regulations via Article IX.1(f). Although this Article specifically refers only to 'preservation and conservation of *living* resources in Antarctica' (emphasis added), this does not preclude the taking of measures regarding *non-living* resources as well, since the wording of Article IX.1: '...*including* measures regarding:...' (emphasis added) is not exclusive. In fact the Article allows the Treaty Parties to make decisions on any subject which is relevant to the Antarctic.

The Article which has prompted the most discussion and remains the most contentious in law is Article IV which deals with the sovereign claims. Of sovereignty, one international lawyer has commented that: 'It is doubtful whether any single word has ever caused so much intellectual confusion and international lawlessness' (Akehurst 1987:15). Given that the conflicts over territorial sovereignty claims were so crucial in the Treaty negotiation process, Article IV stands alone as the single most important element in the Treaty. It attracts great controversy over its interpretation, with one commentator suggesting that '...it states what it does not mean and does not state what it was intended to mean' (Gruenig in Triggs 1985:199).

Article IV reads:

> 1 Nothing contained in the present Treaty shall be interpreted as:-
>
> (a) a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;
>
> (b) a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;
>
> (c) prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.

> 2 No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.

(Antarctic Treaty Article IV)

In the most reductionist terms, what Article IV means, in part, is that those states which have made claims to Antarctic territory can maintain them; those which have not made claims but which might do so in the future, maintain that right; any Contracting Party to the Treaty can choose to recognise another's claim or not, as it sees fit; neither new claims nor enlargement of existing claims are allowed; but in any case, nothing anybody does will in any way effect the present *status quo* regarding claims during the life of the Treaty. In short, Article IV appears to mean '...all things to all States' (Gruenig in Triggs 1985:201). Significantly, the principles of Article IV have been perpetuated in each instrument additional to the original Treaty (Bush 1982:56-63).

The Antarctic Treaty embraces a unique system of governance based on several categories of participants. All states which are Contracting Parties to the Treaty (that is, have ratified the Treaty) are either original signatories, acceding states or succeeding states. Any state which is a member of the United Nations may accede to the Treaty; others may be invited after agreement between all of the Contracting Parties (Article XIII). All Parties are entitled to send representatives to meetings. However, the original 12 signatories to the Antarctic Treaty automatically have Consultative Party (decision-making) status. Any other Contracting Party may become a Consultative Party:

> ...during such time as that Contracting Party demonstrates its interest in Antarctica by conducting substantial scientific research activity there, such as the establishment of a scientific station or the despatch of a scientific expedition.

(Article IX.2)

Antarctic Treaty Parties meet annually or at specially convened sessions, to give effect to these principles and objectives of the Treaty. In addition to concluding binding pieces of international law like conventions and protocols, the Consultative Parties make recommendations by unanimous agreement. The representatives take these recommendations home to their state governments for consideration. The legal status of meeting decisions is uncertain. However, the bottom line is that the Treaty Parties may be bound morally, if not strictly legally, to adopt and enforce recommendations

from their meetings, particularly in view of the fact that such decisions are reached by consensus.[237] The Treaty Parties themselves consider that Recommendations are both legally binding and retroactive: Recommendation 7 of Meeting III regarding Acceptance of Approved Recommendations states that:

> Since the Recommendations approved by the Contracting Parties... are so much a part of the overall structure of cooperation established by the Treaty, the Representatives recommend to their governments that any new Contracting Party entitled to participate in [such] meetings should be urged to consider accepting these recommendations and to inform other Contracting Parties of its intention to apply and be bound by them.

In terms of effectiveness, accountability and legitimacy - the analytical parameters used in this study - the Antarctic Treaty presents opportunities to make only superficial judgments. The range of objectives like freedom of scientific investigation, nuclear-free status and reconciled sovereignty claims for instance, can usefully be assessed according to the template on page 62. The Antarctic *problem* was essentially one of conflict over sovereignty, identified through the activities of the state governments, their explorers, Southern Ocean resources harvesters and scientific teams. Because no regime existed to manage the Antarctic, the interested parties agreed that one was necessary and accordingly negotiated the Antarctic Treaty. The regime did not arise spontaneously, nor was it necessarily imposed, although there are indications that entrepreneurial and intellectual leaders guided the negotiations (Hall 1994). In terms of legitimacy, the Treaty represented the most agreeable alternative to all of the parties collectively, despite what some would see as its compromise on sovereignty questions. The wider international community, not represented explicitly within the Treaty group, did not immediately dispute the legitimacy of the regime, hence at this point its legitimacy must be assumed.

The procedural and substantive devices employed by the Treaty ensure a measure of effectiveness. The Treaty Parties are bound by the principles of freedom of scientific investigation, the nuclear-free status, inspection procedures and so on, and are also obliged to 'exert appropriate efforts' to ensure that no-one breaches the spirit and intent of the Treaty (Article X).

Unfortunately, there are few measures which display overt accountability. There are, for instance, no liability rules, no indications of how compliance is ensured and no sanctions. Rather, compliance is voluntary, based on the possibility of scrutiny via the inspection procedures in Article VII. The best that the Treaty offers is a dispute mechanism (Article XI) based primarily on in-house, peaceful means, but with an optional remedy of the International Court of Justice for judicial settlement. The

original Treaty did not encourage the public dissemination of information, and this secretive nature of the Treaty mechanism has attracted much criticism over the years.[238] However subsequent modifications have made documents from Treaty Meetings available to the public, unless otherwise indicated by the Parties (Recommendation XIV.1, 1987). Regime accountability, originally low, has been considerably enhanced by this move.

It should be emphasised, moreover, that in measuring legitimacy, effectiveness and accountability, such judgments must be made within the context of the explicit principles and objectives of the original Antarctic Treaty. In this sense, the Antarctic *has* remained demilitarized, is free of nuclear waste, is still a locus of energetic, cooperative scientific activity and has not become the scene or object of international discord.[239] Each of the subsequent embellishments to the parent document have succeeded in increasing the Treaty's overall operating accomplishments and acceptability, although the road ahead was not always smooth and well sign-posted.

In terms of responsibility for the global ecosystem, the Antarctic Treaty offers little evidence of acknowledgment, primarily because the evolution of most components of this ethic post-date the Treaty. Language similar to the common heritage of mankind concept and the notion of respect for future generations is used. In an indirect and abstract way, the Preamble acknowledges these concepts by stating that '...it is in the interest of *all mankind* that the Antarctic shall continue *forever* to be used exclusively for peaceful purposes' and further, that the freedom of scientific investigation accords with the interests of science '...and the progress of *all mankind*' (emphasis added). These references do not apply in a literal sense as the Treaty area is not considered a global commons area beyond national jurisdiction by the Parties to the Treaty, nor are future generations mentioned explicitly. The Treaty did not advance an opportunity to incorporate the polluter pays principle as development, upon which the principle rests, was not considered likely. Hence the notion of sustainability was not an issue; nor was the principle of acting in a precautionary manner with regard to scientific certainty or risk thresholds. The most important component of the Antarctic Treaty is Article IV, which redefines sovereignty so that it does not impair the ability of the Parties to make decisions regarding a region which they have determined to be more appropriately considered as a whole rather than as individual sectors of claimed sovereign jurisdiction.

One of the first substantive environmental directives to come from a Treaty meeting recommendation was the Agreed Measures for the Conservation of Antarctic Fauna and Flora. The Agreed Measures is the first evidence of the Treaty Parties' ability to adapt policies in line with changing circumstances. It is through studies of this and the

other instruments in the System that the parameters of effectiveness, accountability and legitimacy are more beneficially measured, and the notion of responsibility for the global ecosystem becomes more obvious.

3.1.2 Agreed Measures for the Conservation of Antarctic Fauna and Flora

Although the Antarctic was to be used for peaceful (scientific) purposes only, the Treaty Parties recognised that many activities had the potential to cause environmental harm. Therefore they moved to mitigate harm by constituting the Agreed Measures for the Conservation of Antarctic Fauna and Flora in 1964.

The history of the Agreed Measures is documented in the Handbook of the Antarctic Treaty System (Heap 1990a:2402-10). Following the advice of the Scientific Committee on Antarctic Research (SCAR), Recommendation 8 of Meeting III elaborated the concept of the Antarctic Treaty Area as a Special Conservation Area composed of Specially Protected Areas and Specially Protected Species. Regulations sought a prohibition on the:

> ...killing, wounding, capturing or molesting of any native mammal or native bird, or any attempt at any such act, except in accordance with a permit.

(Article V.1)

Permits constituted the written permission of an 'appropriate authority', that is, any person authorised by a participating government to issue permits (Article II (d) and (e)). A permit could be issued for the provision of indispensable food for men or dogs, for scientific specimens or for museum specimens. A caveat required that Specially Protected Species could only be taken for 'compelling scientific purpose' (Article V.7 (a)), providing such taking did not '...jeopardise the existing natural ecological system or the survival of that species' (Article V.7 (b)). There was, however, no barometer for gauging how such jeopardy could be measured.

Areas of 'outstanding scientific interest' were designated Specially Protected Areas (Article VIII.1) in which the collection of flora, the driving of vehicles and indeed entry itself was restricted without a permit. Once again, permits could be issued for compelling scientific purposes which could not be served elsewhere, providing the resulting actions did not jeopardize the natural ecological system existing in the Area (Article VIII.3 - 4). Importantly, Article IX.1 prohibited the introduction

of alien species of flora and fauna into the Antarctic Treaty Area, south of 60° South, except in accordance with a permit.

The Agreed Measures was required to be legislated through state governments to give it legal effect; in the meantime it was issued as an interim guideline (Recommendation III.9). SCAR was given the task of overseeing and reporting on the efficacy of the Agreed Measures (Recommendation III.10). The Agreed Measures was able to be amended as necessary and subsequent amendments were made following experience with their application and increased knowledge of the Antarctic environment (Heap 1990a:2406).

Although it receives little academic attention today because of its relatively narrow focus and lack of definition, on reflection the Agreed Measures was probably visionary for its time, that is, 1964. In this sense, it could be considered to have a medium degree of legitimacy (according to the parameters in Figure 2, p.62). At the time, little was understood about the devastating ecosystem damage that human activity was causing around the world and very little of this kind of species and special area protection was instituted elsewhere, apart from the national parks systems. But the Antarctic Treaty States could see, first-hand, the potential dangers to the resources of their region and moved to take responsibility for them.

Unfortunately, the Agreed Measures was a Treaty Recommendation only and did not have the full force of an independent legal instrument.[240] Accordingly, despite the permit system, the later amendments on cooperation between proximate stations and the standardization of the format for exchanged information, all of which contributed to a measure of control, accountability was limited. The permit system was loose and there were no adequate methods of policing specially protected areas. Effectiveness was thus also reduced, although in fairness the original objectives of the Recommendation were admirable. In hindsight it could be said that as a first attempt, the Agreed Measures was useful, if for no other reason than it showed the Treaty Parties what needed to be done in the area of fauna and flora protection.

Casually embracing ecosystem principles, the Agreed Measures was a start. The area protection mechanism has been refined many times since and is the basis upon which the current area management practices are founded. All species of Fur and Ross Seals in the Antarctic Treaty area were protected under Annex A of the Agreed Measures but despite recognition of the susceptibility to extermination of *all* Antarctic fauna, the Agreed Measures was not applicable to the high seas, where commercial whaling and sealing had been responsible for reducing whale and seal stocks. This was one serious anomaly which required several attempts at regulation before a measure of

success was achieved. The Convention for the Conservation of Antarctic Seals (CCAS) was the first attempt.

3.1.3 Convention for the Conservation of Antarctic Seals

The Consultative Parties chose an independent legal instrument - a convention, rather than a meeting recommendation - to signal their seriousness about the conservation of Antarctic seals. At the outset the Seals Convention had a greater measure of both effectiveness and accountability than the Agreed Measures because of the independent legal status of the instrument. Legitimacy was not in question, as the Antarctic Treaty States were obviously in the prime position to determine what kind of regulations were appropriate in their area of administration and their actions went unchallenged by the international community.

The Seals Convention was signed in 1972 but did not enter into force until 1978.[241] Only Parties at the 1972 London Conference were entitled to ratify the Convention, but others could be invited by the Contracting Parties to accede to it (Articles 10 and 12). This further increased the legitimacy of the regime by allowing non-Treaty States the right to participate in the Seals Convention.[242]

The prohibitions contained in CCAS extended from pelagic sealing south of 60° South (Article 1.1), to the taking of fauna off the ice pack, and the protection of stocks in their terrestrial habitat (Annex). This was a vast improvement over the protective rules under the Agreed Measures. In the Interim Guidelines issued prior to the adoption of CCAS, the term *maximum sustainable yield* made its debut in Antarctic environmental terminology (Recommendation IV.21). This introduced both the concept of sustainable development (development being, in this case, harvesting) and some precautionary behaviour in the practice of pelagic sealing. This recommendation also acknowledged the value of seals in the 'natural ecological system', thereby embracing a more ecosystem-orientated perspective.

Seal species either wholly or partly protected under CCAS included Southern Elephant, Leopard, Weddell, Crabeater, Ross and Southern Fur Seals (Article 1.2). Importantly, the Annex to the Convention prescribed permissible catches, protected species vagaries, seasons, zones, reserves and methods. The taking of seals for scientific research was allowed provided a permit was obtained from the national authority.

A 10-year review of CCAS held in 1988 elaborated and extended some elements of the Convention, particularly with respect to clarification of the objectives and interpretation of the permit system (Heap 1990a:4113). It was at this review that serious concerns were raised about the accidental introduction of infectious diseases and it was decided to minimise the contact between the sled dogs and seals in the Convention area as a precaution.[243]

The review meeting concluded that the Convention's operation was *reasonably* satisfactory. Seal captures and kills by permit were reported as being low, consequently they could not be considered to have had any '...significant adverse effect on any seal populations' (Heap 1990a:4112). Furthermore, no commercial sealing was envisaged in the near future (Heap 1990a:4112). However, CCAS Parties were reminded of the importance of their reporting obligations pursuant to Article 4.2. The obvious inference from this information is that the Seals Convention could be considered reasonably effective in terms of its original objectives, as actor behaviour had been changed. However, a counterpoint may be that the taking of seals was not being reported, or was being under-reported.

There have been some tragic instances of gross over-exploitation of Antarctic living marine resources: seals in the early 1800s, whales in the 1800s and again in the 1900s and fin fish in the mid-1960s. The Seals Convention was rather more reactive than preventative as it was established to deal with over-exploitation *after* the event, in addition to managing and protecting existing stocks. The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), on the other hand, provided a major turning point in the philosophy of the Antarctic Treaty Parties towards both the exploitation and protection of marine resources.

3.1.4 Convention on the Conservation of Antarctic Marine Living Resources

Fish are a common property, open-access, highly prized resource. Unmanaged or poorly-managed exploitation has brought disastrous consequences: historically, fisheries have been over-harvested and in such circumstances, the harvesters have simply moved on to new grounds. As the historical account of Chapter 2 indicated, the Southern Ocean has been no exception. The 1964 Agreed Measures was not applicable to the high seas and therefore did not give any protection to the living resources of the high seas. In any case, the Agreed Measures was only a Treaty Recommendation and had uncertain legal standing. Furthermore, the 1972 Seals Convention dealt only with seals. But there are far more resources than just seals and whales in the Southern Ocean.

In the 1960s fin fisheries were well established in the Antarctic and sub-Antarctic waters, with an experimental krill fishery begun early in the 1970s. Krill had then, and still has now, the potential to be the largest single crustacean species fishery in the world.

In general terms, there are several reasons why fisheries resources need to be managed:

- The resources are plentiful and could make significant contributions to world food supplies;
- Interdependence between vital elements of the food chain is not well understood;
- The notion that resources should be maintained in an optimal condition;

and with particular reference to the Antarctic –

- the effects a large-scale krill fishery might have on the species which feed on krill, which, in the Antarctic ecosystem, is almost every living thing in the food chain above krill, were poorly understood.

Some kind of management of the krill fishery was therefore indicated, seemingly as a matter of urgency before the traditional open access pattern of harvesting wrought havoc on that resource too.

Building on the successful negotiation of the Seals Convention, the Treaty Parties took issue with the possibility of over-exploitation of krill and other Southern Ocean living resources. By 1975 the Parties had embodied these concerns in Recommendation 10 of Meeting VIII, stating their objectives to be protection, scientific study and rational use of marine living resources (Heap 1990a:4201). Scientific study was seen as the conduit to both protection and rational use.

In 1976, SCAR established the Biological Investigation of Marine Antarctic Systems and Stocks (BIOMASS) program of research,[244] which was assisted by reports from the UN Food and Agriculture Organisation. As a consequence, krill resources were elevated to a principal position of importance in the food chain. Furthermore, the motivation to establish a mechanism for marine resource management became more urgent with the development of extended coastal state jurisdiction over fisheries, which was an integral part of the UNCLOS III negotiations of the time (Heap 1990a:4201).

Using the Treaty mechanism of *ad hoc* Special Consultative Meetings, negotiations began in February 1978 and were concluded in May 1980. The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) was opened for signature by those who attended the 1980 Canberra Conference (Article XXVI) and thereafter by any states or regional economic organizations interested in research or harvesting in the Southern Ocean (Article XXIX).[245] The inclusion of non-Treaty states and regional economic groups in the CCAMLR regime was an enhancement of the regime's legitimacy, tempering but not jeopardizing the Treaty Parties' exclusive rights over all matters Antarctic.

CCAMLR entered into force on 7 April 1982. The Commission for CCAMLR, established under Article VII, was the first Antarctic Treaty organisation – the first time the Treaty Parties had acknowledged the utility of an organ independent of the Treaty Meeting process.[246] By virtue of this Commission, CCAMLR has legal personality (Article VIII), that is, it is:

> a subject of the law...capable of possessing international rights and duties and having the capacity to maintain its rights by bringing international claims.[247]

Article XII provides for consensus voting on issues of substance by the Commission, consistent with common practice in the Antarctic Treaty Meetings. This effectively gives the Treaty Consultative Parties, which are also parties to CCAMLR, a veto and maintains their elite position within the System by ensuring that their domestic interests and priorities prevail. This is not necessarily a bad thing while their interests accord with the interests of the wider international community with regard to marine resource management. The fact that non-harvesters outnumber harvesters in the membership of CCAMLR makes little difference because of this consensus voting arrangement. Consensus decisions, while obviously much harder to reach, are likely to be more effective.

CCAMLR could be said to have a measure of legitimacy which is unprecedented in terms of the Antarctic Treaty System because of its legal standing, its inclusion of external participants and its accountability through the public release of published information.[248] Moreover it has some other noteworthy features. The northern limit of CCAMLR's area of application coincides with the so-called Antarctic Convergence, the circumpolar bio-geographic boundary where the cold northerly-moving water sinks below the warmer, southerly-moving sub-tropical water (Article I.1). This gives CCAMLR a biological as opposed to a political foundation for its conservation measures. It is the first extension of an area of application past the Treaty boundaries (south of 60° South). In fact, the primacy of the role of science is evidenced

throughout CCAMLR, which establishes a Scientific Committee as a consultative body to its Commission (Article XIV).

Krill is a much prized crustacean and the Antarctic Treaty Parties, aware of the potential global importance of this *seemingly abundant* marine resource,[249] chose to regulate its harvesting before the threshhold of risk was reached (Article II). This is a good example of the emerging soft law precautionary approach with regard to a living resource. CCAMLR did not, however, include extra protection for whales and seals, which were already regulated under the Whaling and Sealing Conventions (Article VI).

Although its conservation principles were defined to include *rational use* (Article II.2), the Convention contains the requirement that exploited populations do not fall below a level close to that which ensures their greatest net annual increase (Article II.3(a))[250]; depleted populations must be restored to such levels and the ecological relationships between harvested dependent and related species must be maintained (Article II.3(b)); and risks of changes to the marine ecosystem that are not potentially reversible over two or three decades must be minimised (Article II.3(c)). This is an ecosystem approach to rational use of Antarctic marine living resources (excluding whales and seals) as opposed to a single species approach, and is supported by the Scientific Committee which collects, studies and exchanges data.[251]

Lastly, two further dimensions to CCAMLR deserve comment. Article IX.6(c) and (d) are essentially opt-out clauses, through which Members can choose whether or not to accept and be bound by a particular conservation measure. Article XXI designates that compliance is voluntary. Given the physical dimensions of the Southern Ocean, this means too that compliance is almost certainly unenforceable. These loopholes have the potential to jeopardize the overall effectiveness of the regime.

As an aside, it is also important to note the wording of Article IV.2(b) regarding the exercise of coastal state jurisdiction in international law.[252] This issue is taken up further in the concluding Chapter in the context of the Law of the Sea, exclusive economic zones and the current debate about whether coastal states actually exist in the Antarctic.

In terms of measuring CCAMLR's effectiveness, it must be restated that such a judgment should only be made against its explicit biological objectives of *conservation through rational use*, rather than against any implicit political objectives like maintaining the *status quo* of sovereign claims or maintaining the exclusivity of the Treaty Parties' management of the Southern Ocean resources. Because the operation of CCAMLR involves an exercise of power over the allocation and distribution of

resources, it is bound to be more contentious than purely regulatory regimes like the Agreed Measures or the Seals Convention. Accordingly, when measuring effectiveness, account needs to be taken of the balance between CCAMLR's conservation principles and its rational use principles. The problem is that if catch data is inaccurately reported or scientific advice is ignored or the power of veto is exercised to protect domestic interests, measurements of effectiveness must reflect this. Furthermore, a regime would be considered seriously flawed if it allowed these types of anomalies to unbalance its objectives.

Overall CCAMLR scores reasonably highly with regard to legitimacy, accountability and responsibility. Not surprisingly, the area where it does not score well is effectiveness. Unfortunately this is consistent with the performance of other international fisheries regimes and in this instance is based upon the fact that there is no evidence available to suggest that species have been *protected* as such. This may be more a product of lack of information rather than lack of effectiveness on the part of the regime.

Although it was difficult to negotiate a regime for fisheries management, the concurrent UNCLOS III negotiations had already provided both a measure of confidence and some basic guidelines. Moreover, negotiating CCAMLR was relatively easy considering what was next on the agenda: the regulation of mineral resource activities.

3.1.5 Convention on the Regulation of Antarctic Mineral Resource Activities

The developments discussed so far had been possible through the Treaty System's evolution and adaptation in response to a degree of scientific prompting from SCAR. There was nothing within the System, however, which prepared the Parties for dealing with the issue of mineral resource activities. Ironically it was to be the conclusion by the Treaty Parties that *unregulated* mineral activity was more likely to pose serious environmental hazards than regulated activity, which led them to call on SCAR experts to investigate the System's options in this regard in the late 1970s.

In hindsight, the findings of the SCAR experts are noteworthy:

- there are no known mineral reserves - deposits of a size and quality to be potentially exploitable in the Antarctic;

- such resources as there may be are unlikely to be economically exploitable until well into the next century, if ever; and

- the technology does not yet exist to cope adequately with the particular challenges of the Antarctic environment, particularly off-shore.[253]

- Therefore there is no need to negotiate a regime at this stage.

(Heap 1990a:4301)

Nevertheless the Parties did proceed with the negotiation of CRAMRA. The question must be asked: Why? Most commentators agree that it was an anticipatory move in which the Parties were concerned more with possibilities than with probabilities, and with a preference for regulation before the fact rather than after.[254] The Antarctic Treaty Parties had successfully concluded CCAMLR, which dealt with living resources, and this had left a void in the System: there was no regime for management of non-living resources.

CRAMRA was concluded in 1988 after six years of intense negotiations. Unfortunately, the final instrument attracted the title of 'Minerals Convention' and was, rightly or wrongly, perceived as being pro-mining. It is true that the Convention did permit mining - at the end of an elaborate qualification procedure - but CRAMRA arguably contained some of the most stringent safeguards with relation to the environment (Blay 1992:377). There is little point in labouring over the provisions of CRAMRA as is unlikely that it will ever enter into force.[255] However it does contain several significant articles, especially ones regarding liability – one essential issue the Treaty Parties are yet to adequately address.

The first stated objective of CRAMRA is to assess '...the possible impact on the environment of Antarctic mineral resource activities' (Article 2.1(a)). Further, should such activities occur, the Parties to the Convention are reminded of their special obligations to, *inter alia*:

(a) protect the Antarctic environment and dependent and associated ecosystems;
(b) respect Antarctica's significance for, and influence on, the global environment;

(c) respect other legitimate uses of Antarctica; and

(d) respect Antarctica's scientific value and aesthetic and wilderness qualities.

(Article 2.3 (a)-(d))

Once again the Parties had taken an ecosystem perspective, but while virtuous in tenor, no specific definitions were given to guide the Parties about the meaning of damage, what conduct caused damage or how to measure impact.

CRAMRA would have established a quite substantial organizational and regulatory infrastructure comprising the Antarctic Mineral Resources Commission, an Advisory Committee, Special Meetings of Parties, Regulatory Committees, a Secretariat and any subsidiary bodies that might have been required. These would have been financed by prospecting, exploration and development fees, levies on Operators and contributions from the Parties to the Convention.

Essentially there would have been three levels of activity: i) prospecting, which would not have required authorization by the organizations within CRAMRA but would have required a Sponsoring State; ii) exploration, which would have required a permit; and iii) development, which would have been the final exploitation phase of mineral resource activity.

Article 8 of CRAMRA relating to Response Action and Liability required that each 'Operator' (that is, prospector or miner) should have a 'Sponsoring State' (that is, a Treaty Party) and that the State could become, under certain circumstances, residually liable for the actions of the Operator. This had major implications in terms of both effectiveness and accountability, as a mechanism for acquiring appropriate compensation and also as a mechanism for ensuring the compliance by the Sponsoring State with *their* obligations. Further, Article 8.9 required that an annex on liability be concluded *before* any applications for exploration or development permits would be issued.[256] The operation of CRAMRA was thus contingent upon the adoption of liability measures. This was an extraordinary measure of accountability in Antarctic Treaty System terms.

How could such an instrument as CRAMRA fail? It was mentioned in Chapter 1 that the burgeoning world-wide environmental movement had gained momentum throughout the 1970s and 1980s. There were concepts such as *greenhouse* and *ozone*; there were *oil spills* (the *Exxon Valdez* off Alaska and the modest yet nonetheless severe *Bahia Paraiso* off the Antarctic Peninsula, and others); and suddenly, though perhaps not surprisingly, the polar regions began to take on a particularly vulnerable profile for environmentalists. There was a groundswell of environmental lobbying against CRAMRA, based primarily on what the lobbyists saw as a lack of specific environmental protection regulations against *all* activities, as well as those concerning mineral resources. But there were also endemic problems within CRAMRA itself.

CRAMRA, like most pieces of international law, was an instrument full of compromises. For instance, it failed to acknowledge two issues central to the claimant states: requests for mining royalties to be paid to claimants, and a prohibition on subsidised mining (Bergin 1990). Because the power of the claimants' position

within the Antarctic Treaty System was supreme CRAMRA, through its failure to accommodate this explicitly, was doomed. It was a *force majeure*, with just too many credible criticisms, suggesting that the Parties had taken the wrong policy and law approaches to the issue of Antarctic non-living resources (Joyner 1994). The relativity of the exploitative versus environmental measures simply had no place in modern Antarctic management.

It has been suggested that CRAMRA left the Treaty System a legacy of legitimacy. (Joyner 1994). Legitimacy, according to Joyner, arises when states impose legal obligations upon themselves. Yet by rejecting CRAMRA, and particularly Articles 2 and 4 which contained the environmental principles, the legitimacy of CRAMRA was disputed by the Parties themselves.[257] Rather, it could be said that CRAMRA left them a legacy of illegitimacy.

Australia and France were the first claimant-state dissenters; they were able to effect a veto because all seven claimant states were required to ratify CRAMRA (pursuant to the provisions of Article 62.1). Australia and France set out on another course entirely - that of *greening* the Antarctic.[258] Many other Antarctic states followed their lead, which culminated in a series of four Special Consultative Meetings held in the space of less than one year. The compromise Protocol on Environmental Protection to the Antarctic Treaty was finally adopted – in lightning speed in Treaty terms – in 1991.[259]

The pre-Protocol Antarctic Treaty System comprised an array of legal regimes, as described above. While many of their objectives were similar with regard to respect for the Antarctic environment, *comprehensive* ecosystem protection would only be achieved by drawing together these hitherto *ad hoc* components into one new instrument. Although each regime was a component of the broader Antarctic Treaty System, their piece-meal development and somewhat inconsistent environmental principles did not necessarily accord with the sophisticated ecosystem approach advocated for the 21st century. The Antarctic Treaty Parties therefore had no choice but to negotiate their way out of CRAMRA, which contained environmental provisions relating to mineral resource activity only, and into a legal instrument which would provide so much more in the way of substantive ecosystem protection and restrictions on *all* human activity. World opinion dictated that this should be so, particularly since:

> ...most people know it is fundamentally crazy to be thinking about obtaining oil and other minerals that may be in the Antarctic, particularly in view of the latest reports from the scientific community in the climate context.

(Barnes 1992:21-2)

This work would not be complete without a brief mention of the role of environmental NGOs in the demise of CRAMRA.

- **Role of Environmental NGOs**

The Antarctic Treaty System has relied, to varying degrees, on the advice of experts in formulating its policies on the Antarctic. These have included SCAR, the World Health Organization, the International Maritime Organization and others. However, the System has constantly resisted the advances of environmental NGOs. Despite this, three principal NGOs have maintained a strong profile in Antarctic affairs: Greenpeace International, the Australian Conservation Foundation (ACF) and the Antarctic and Southern Ocean Coalition (ASOC).

These three NGOs, which all had a long history of interest and involvement in Antarctic affairs, became involved with the issue of mineral resource activities. The groups each employed unique terminology and methods for getting their message across, for mobilizing public sentiment, and for participating in the negotiation process. However, they did have one common goal: the comprehensive protection of the Antarctic ecosystem.[260] The ACF, for example, had begun its push for the Antarctic to be declared a World Park in the 1970s and had carefully cultivated beneficial Australian political alliances since that time.[261] The campaign of the ACF was primarily located in the Australian domestic arena, where its credibility and legitimacy as an environmental crusader was well established. Through its political connections, the ACF gained representation at Treaty meetings by having its staff chosen as delegation members, and to put its message across in an educative, non-confrontationist manner.

Greenpeace International was less circumspect than the ACF. Greenpeace is well known internationally for its direct-action style of campaigning and this is possibly due in some measure to the fact that Greenpeace is wholly funded from public subscription (compared with ACF, for example, which does accept government grants and support); hence it feels more of an imperative to make its presence felt and its opinions known in very positive terms (Williams 1993:57). Greenpeace went straight to the heart of the matter in the summer of 1986 by establishing its own base in the Antarctic - World Park Base at Cape Evans on Ross Island. From here Greenpeace was able to carry out inspections of other stations; to gather evidence of environmental malpractice; to show the ATS how an environmentally-friendly base could operate; and to conduct minimal scientific programs in an attempt to attract legitimacy to its campaign and to its presence in Treaty territory.[262]

Significantly Greenpeace, through its actual presence on the ice, was able to mobilize media support and public hysteria over the issue of Antarctic mineral resource activities. Greenpeace was also instrumental in the campaign to *save* the Antarctic by being in a financial position strong enough to enable them to support the third, and perhaps the major environmental NGO, ASOC.

The Antarctic and Southern Ocean Coalition was formed in 1977 and is composed of about 60 interest groups. Unlike Greenpeace and ACF, the primary focus of ASOC is, as its name suggests, Antarctica and the Southern Ocean. Accordingly, as early as 1983 ASOC was granted official observer status within the CCAMLR regime. This official legitimacy meant that ASOC was almost an *insider*. In fact, with ASOC on board, Greenpeace was able to quit its improbable pursuit of insider status and to attach itself to the legitimacy of ASOC. As an observer ASOC attended the XVIth ATCM in Bonn in 1991; the XVIIth meeting in Venice in 1992 (along with IUCN); and the XVIIIth ATCM in Kyoto in 1994 (along with both IUCN and UNEP).

Factions developed within the Antarctic Treaty System during the CRAMRA debate. Some states were pro-mining; some were anti-mining; and some were more cautious, desiring to see both protection of the environment and rational use of resources covered by some kind of control mechanism. The concerted push, both domestically and internationally, by the world-wide network of environmental NGOs was instrumental in the re-shaping of Antarctic policy in favour of the more comprehensive protection of the environment and the corresponding total prohibition of commercial mineral resource activities.

In summary, a dedicated regime - the Madrid Protocol on Environmental Protection to the Antarctic Treaty - was formed because the existing regimes (Agreed Measures, CCAS, CCAMLR and CRAMRA) were inappropriate in terms of holistic ecosystem management, despite whatever credibility they had as autonomous regulations for issue-specific areas. While there was a high degree of legitimacy within the pre-Protocol ATS, both effectiveness and accountability scored only marginally well. Thus in terms of overall responsibility for the global ecosystem, it was not until the Protocol came along that any true measure of general accountability was to be found.

The next section will look at the Protocol in more detail to see how well it measures up within the analytical purview of this study.

3.2 The Madrid Protocol on Environmental Protection to the Antarctic Treaty

The study so far has presented a description of the Antarctic region, its political and scientific history, geophysical architecture and the environmental ethics of the Antarctic Treaty System, as background to the analysis which is to follow.

The Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol) was concluded on 4 October 1991 in Madrid.[263] The Treaty Parties met at specially-convened sessions of the XIth Antarctic Treaty Consultative Meeting, in Chile in November 1990 and again in Madrid in April, June and October of 1991. The instrument is not yet in force.

The Madrid Protocol re-defines the Antarctic Treaty area and re-casts the rules and regulations governing behaviour there into more ecosystem-orientated terms. It is a framework instrument into which minimum standards are embedded as a guide towards future directions of the Antarctic Treaty System.

3.2.1 The Antarctic : 'A Natural Reserve Devoted to Peace and Science'

The Madrid Protocol contains 27 Articles, a Schedule on Arbitration and five Annexes which, according to Article 9, are to be considered integral parts of the Protocol itself. The Annexes elaborate on the issues of Environmental Impact Assessment, Conservation of Antarctic Fauna and Flora, Waste Disposal and Waste Management, Prevention of Marine Pollution and Area Protection and Management. In addition, the Parties to the Protocol are to conclude a further annex on liability, pursuant to Article 16.

The nature of the Protocol is such that it represents a framework document containing broad, fundamental principles and directives which are further defined in the Annexes. The amendment procedure contained within each annex makes them ideal vehicles for progressively up-dating the details of environmental protection, without the need to negotiate a completely new parent document.

The objective of the Madrid Protocol is found in Article 2:

> The parties commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems and hereby designate Antarctica as a natural reserve, devoted to peace and science.

This objective will be attained through giving fundamental consideration in the planning and conduct of all activities in the Antarctic Treaty Area to the environmental principles contained in Article 3. Specifically, such activities should *limit* adverse impacts on the total ecosystem (Article 3.2(a), emphasis added). Activities should *avoid* having adverse affects on climate or weather patterns; air or water quality; the atmospheric, terrestrial, glacial or marine environments; the distribution, abundance or productivity of species or populations of fauna and flora; or placing in further jeopardy endangered or threatened species; or degradation of, or risk to, areas of biological, scientific, historic, aesthetic or wilderness significance (Article 3.2(b), emphasis added).

Parties to the Protocol are directed that in the making of planning decisions, account should be taken of, *inter alia*, cumulative impacts, detrimental effects, safety of technology and whether there exists a capacity to monitor the ecosystem, identify problems and provide early warning of and response to adverse effects (Article 3.2(c)(i)-(vi)). In addition, the predicted impacts of on-going activities must be verified (Article 3.2(d)) along with unforeseen effects (Article 3.2(e)). Scientific research is given priority in the planning of activities (Article 3.3).

Any activities, governmental or otherwise, can be modified, suspended or cancelled if they result in, or threaten to result in, '...impacts upon the Antarctic environment or dependent or associated ecosystems inconsistent with [those] principles' (Article 3.4(b)). Criticism regarding Article 3 focuses on the fact that it is couched in hortatory language. Despite this, Article 3 contains the binding principles for environmental protection (Joyner 1995:19)

Any activity relating to mineral resources, other than scientific research, is prohibited, according to Article 7.[264]

These environmental principles of the Protocol are further elaborated in its Articles 8 and 9. Article 8 provides for environmental impact assessments to be carried out on three levels of activity having:

1 less than minor or transitory impact;
2 a minor or transitory impact;
3 more than a minor or transitory impact.

(Article 8.1)

The Parties are referred to Annex I for further instructions in this area (Article 8.1, 8.3). The environmental impact assessment (EIA) process is further discussed later in this Chapter.

Article 9 stipulates that annexes are integral to the Protocol (Article 9.1) and that additional annexes may be adopted as necessary, in addition to those already mentioned (Article 9.2).

The stated principles of the Protocol attract a high score in terms of responsibility for the global ecosystem by embracing an ecosystem approach to all Antarctic activity. How, then, will this comprehensive regime function?

3.2.2 Conditions of Operation of the Madrid Protocol

The Madrid Protocol supplements the Antarctic Treaty but does not stand alone because it relies on the Antarctic Treaty Consultative Meetings for much of its procedural direction. The Protocol's direct link to its parent instrument is embodied in Articles 4 and 5:

> 1. This Protocol shall supplement the Antarctic Treaty and shall neither modify nor amend that Treaty.
>
> 2. Nothing in this Protocol shall derogate from the rights and obligations of the Parties to this Protocol under the other international instruments in force within the Antarctic Treaty System.

(Article 4)

and Article 5:

> The Parties shall consult and cooperate with the Contracting Parties to the other international instruments in force within the Antarctic Treaty System and their respective institutions with a view to ensuring the achievement of the objectives and principles of this Protocol and avoiding any interference with the achievement of the objectives and principles of those instruments or any inconsistency between the implementation of those instruments and of this Protocol.

These two Articles preserve the *status quo* of the Antarctic Treaty System. Notwithstanding, it was necessary to insert an entreaty to the Parties to ensure that cooperation was maintained (Article 6).[265] Importantly, the Protocol also pays respect to adjacent jurisdictions, urging Parties to cooperate with such states so as to ensure activities in the Antarctic Treaty area do not cause trans-frontier environmental harm (Article 6.3). This external linkage adds legitimacy to the System in general and to the Protocol in particular.

The conditions of operation of the regime are divided into two categories: the procedural or administrative devices which determine how it will function, and substantive mechanisms which regulate behaviour and create legal obligations.

- **Procedural Devices Within the Madrid Protocol**

The Protocol contains a range of procedural devices to ensure that its primary objective is attained. The Protocol via its Articles 4 and 5, adopts the Treaty's Article IX on the nature of meetings: who can be present; their status; the exchange of information; and consultation, formulation and policy recommendation on the Antarctic (Treaty Article IX.1-3). Article IX of the Treaty also regulates the procedure for policy to become effective (Treaty Article IX.4-5).

Article 11 of the Protocol establishes a Committee for Environmental Protection (CEP). There are two tiers of participants in CEP: representatives from all Protocol Parties (Article 11.2); and representatives from any Antarctic Treaty Parties which are not a party to the Protocol. The participation of this latter group is restricted to *observer status* only (Article 11.3). The heads of both SCAR and CCAMLR's Scientific Committee are invited as observers, along with anyone else the Committee sees fit to invite, with the approval of an Antarctic Treaty Consultative Meeting (Article 11.4). A Transitional Environmental Working Group (TEWG) has been set up as an interim body until the Protocol comes into force and the CEP is formally established.[266]

The rules of procedure for the CEP are to be laid down by Antarctic Treaty Consultative Meetings (Article 11.6) which also hold responsibility for reviewing the work of the CEP (Article 10.2). Importantly for the assessment of accountability, the CEP is to report to Antarctic Treaty Consultative Meetings and then make their reports publicly available (Article 11.5).

At a functional level, the CEP is only an advisory body to the Consultative Meetings (Article 12). It is mandated to both provide advice and formulate recommendations on every aspect of the Protocol and the measures taken for ecosystem protection. The assumption of course is that the CEP will be stacked with *experts* and that the Consultative Meetings will recognise and respect such expertise. The failure of the ATS to establish an independent external CEP sacrifices a small measure of external legitimacy, but it is consistent with the usual practice of keeping the Antarctic Treaty System free from external interference. There is no indication that the in-house, advisory status of the CEP will necessarily inhibit the enforcement of the Protocol's regulations as the System has relied, with success, on cooperation and consensus in the past.

Each Party to the Protocol is required, under Article 17, to provide an annual report on its implementation of the provisions of the Protocol. Such reports, once circulated throughout the System, are also to be made publicly available (Article 17.2). Once again there is a measure of accountability implicit in the procedural conditions of the Protocol.

A standard dispute settlement clause is contained in Article 18. It recommends, as the first course of action, passive in-house consultation among Parties to mediate disputes concerning interpretation or application of the Protocol. Although no state is permitted to make reservations to the Protocol, pursuant to Article 24, certain of the Protocol's Articles may be challenged through a more regulatory dispute settlement procedure contained in Article 19. Problems associated with Article 7 (mining prohibition), Article 8 (environmental impact assessment), Article 15 (emergency response) or indeed any problems of compliance with the Protocol which relate to these Articles and their relevant Annexes may be taken to either the International Court of Justice or the Arbitral Tribunal (specially constituted under the Schedule to the Protocol), or both. A declaration in writing is required by each Party to the Protocol to state their preference in this regard. If no declaration is valid, the forum of the Arbitral Tribunal shall prevail.

Article 25 deals with amendments and modifications to the Protocol, which may occur at any time in accordance with the procedures set forth in the Treaty Article XII.1(a) and (b). Annexes may contain their own amendment provisions (Article 25.1). A Review Conference is provided for after 50 years, and modifications or amendments proposed at that forum require only a majority, but must include a 3/4 majority of all Consultative Parties which attended the original Protocol signing (Articles 25.2-4).

In conclusion, procedurally the Protocol is inextricably linked to the Antarctic Treaty. The elite position of claimants and Consultative Parties to the Treaty is preserved. There are several positive accountability measures, especially the public release of information. The CEP, once established, is expected to provide the best scientific advice available and the assumption is that this will increase the effectiveness of decisions taken by the Parties. These conditions of operation of the Protocol are further enhanced by the substantive mechanisms the Parties have devised to execute their objectives.

- **Substantive Devices Within the Madrid Protocol**

There is a range of substantive devices throughout the Protocol which impose particular legal obligations upon the Parties.

Article 1

The fundamental substantive provisions of the Protocol are found in Article 1, which defines the Antarctic Treaty; its area of application (Treaty Article VI); Antarctic Treaty Consultative Meetings and Consultative Parties (Treaty Article IX); the Antarctic Treaty System; the Arbitral Tribunal (as per Protocol Schedule); and the Committee for Environmental Protection. Article 1 does not critically define up-front *environment, impact* or any of the other esoteric language of the Protocol. This may have been deliberate, leaving Parties free to develop their own interpretations, with the security of having in place a mechanism for dealing with disputes arising from any ambiguity of interpretation (Arbitral Tribunal).

The Environmental Impact Assessment provisions of Article 8 and Annex I, together with the Schedule on Arbitration and the other Annexes, form the substantive foundation of the Protocol's environmental principles found in Article 3.

Article 8 and Annex I

Article 8 deems that all authorized human activity in the Antarctic comes under its provisions, together with those of Annex I on environmental impact assessment procedures, as well as other instruments in international law which are cited. Unauthorized activity obviously does not.

The responsibility for conducting EIAs rests with the state operators. As mentioned earlier, there are three levels of assessment: a preliminary stage, an initial environmental evaluation and a comprehensive environmental evaluation. Assessment occurs prior to an activity being undertaken.

At the preliminary stage, any activity deemed to have a *less than minor or transitory impact* may proceed forthwith (Annex I, Article 1). The type of activity allowable in this category would be, say a photographer taking pictures of a station and its environs. Even such an innocuous action as this would be required to be assessed at the preliminary level, but would most probably only entail making a statement on the original research application form. It is likely that no further assessment or inquiry would be considered necessary.

An Initial Environmental Evaluation (IEE) would be conducted if the proposed activity was deemed likely to cause *more than a minor or transitory impact.* In such cases, the assessment would include a description of the activity, its purpose, location, duration, intensity and consideration of alternatives. Some examples of IEEs already conducted are for the proposed replacement, operation and decommissioning of the ice wharves

at McMurdo Station (May 1992) and for the removal of Greenpeace's World Park Base (1991).[267] Approval will be given for the activity to proceed if it can be shown that it will cause not more than a minor or transitory impact. Monitoring and assessment procedures may be put in place, however, to verify the stated level of impact (Annex I, Article 2).

If the activity is found likely to cause more severe or cumulative effects, a Comprehensive Environmental Evaluation (CEE) will then be required. This is far more extensive, requiring that the IEE be followed up with a description of the methods and data used to forecast the impacts and a further estimation of the likely direct, indirect, cumulative and unavoidable impacts. Applicants will be required to identify measures which might be taken to minimize impacts or provide early warning of unforseen adverse effects. This is relevant not only to the environment but also to the other existing uses and values of the Antarctic, meaning that activities which might impact on scientific programs, for instance, must be subject to the assessment process. Applicants will be required to identify gaps in their knowledge and uncertainties encountered in compiling their CEE, and to provide a non-technical summary for lay interpretation (Annex I, Article 3.1-2).

Draft CEEs are to be made available to the public and the Treaty Parties for comment at the same time as they are forwarded to the CEP for its consideration (Annex I, Article 3.3-4).

Ultimately, Final CEEs and an accompanying CEP recommendation are reviewed by the Antarctic Treaty Consultative Parties, at least 60 days prior to the commencement date of the proposed activity (Annex I, Article 3.5-6). The activity may be allowed to proceed conditonal upon acceptance of the Final CEE and other relevant considerations such as the establishment of monitoring and verification measures (Annex I, Articles 4 and 5).

There is an exception in the environmental evaluation process for cases of emergency involving the '...safety of human life or of ships, aircraft, or equipment and facilities of high value, or the protection of the environment' (Annex I, Article 7.1). In the case where a CEE would normally have been required, the document must be prepared and circulated within 90 days after the event, complete with a full explanation of the emergency situation.

The EIA procedure has been criticised because the onus is on the state operator to conduct the assessment. It is felt that if the state operator wanted an activity to go ahead, they would be likely to proceed with it regardless of the outcomes of the EIA

process. This may well be true. But theoretically the process would seem to have enough checks and balances to help expose and eliminate such behaviour.

Annex II

Annex II covers the Conservation of Antarctic Fauna and Flora. According to this Annex, the taking of or harmful interference with native fauna and flora is prohibited, except in accordance with a permit.

Permits will be issued by state authorities for the taking of scientific or educational specimens, strictly on a *needs* basis (Annex II, Article 3). The Annex, in its Article 1, provides expansive definitions of what constitutes a native mammal, bird, plant and invertebrate, who is an appropriate authority for the issue of permits, what a permit is, what 'take' or 'taking' means and what constitutes 'harmful interference'. (Annex II, Article 1). It leaves little room for ambiguity in its definitions.

An appendix to Annex II lists Specially Protected Species, the taking of which shall not be permitted unless for compelling scientific purpose, provided it does not jeopardize the survival or recovery of the species or local population, and unless non-lethal techniques can be used if appropriate (Annex II, Article 3.4 and 3.5). There is the usual caveat on cases of emergency (Annex II, Article 2).

The Treaty Area is protected against the introduction of alien species under Article 4, but this may not apply to the discharge of alien organisms in the *clean* ballast water of ships.[268] Importantly this Annex defers to the International Convention for the Regulation of Whaling because only Fur and Ross Seals are on the specially protected species list (Annex II, Article 7).

Annex III

Annex III on waste disposal and management imposes general obligations on the Parties to minimise waste production and to clean up past and present waste disposal sites on the continent. It also seeks to have as much waste as possible returned to the country of origin and gives guidelines for the minimum levels of waste treatment and the disposal of combustible and liquid wastes on the continent or at sea (Articles 1-5). There are some prohibited products. These include polychlorinated biphenyls (PCBs), non-sterile soil, polystyrene beads, chips or similar forms of packaging and pesticides (other than for limited purposes) (Article 7).

Waste management plans are required for five classes of waste and those plans are to be included in annually exchanged information, which the CEP may also review and advise upon:

1 sewage and domestic liquid waste;
2 other liquid wastes and chemicals, including fuels and lubricants;
3 solids to be combusted;
4 other solid wastes; and
5 radioactive material.
(Article 8)

The Parties are required to designate a waste management official to oversee management plans (Article 10).

Annex IV

Similarly, the fourth Annex on the Prevention of Marine Pollution contains expansive definitions and defers to the International Convention for the Prevention of Pollution from Ships 1973 and its 1978 Protocol (MARPOL). Discharging oil or oily mixtures is prohibited, except as permitted under MARPOL (Annex IV, Article 3); the discharge of noxious liquid substances is strictly prohibited (Annex IV, Article 4); and the disposal of most garbage is also prohibited (Annex IV, Article 5). Cases of emergency are exempted from these prohibitions (Annex IV, Article 7).

To further strengthen the provisions of this Annex, the Parties are asked to take into account its objectives when designing, constructing, manning and equipping ships to be used in Antarctic operations (Annex IV, Article 10). Government, non-commercial ships are granted sovereign immunity, but are asked to act in a manner reasonably consistent with the Annex (Annex IV, Article 11).

In recognition of the potential for accidents to occur and the enormous difficulties faced in responding to such incidents, the Parties are required to have in place preventative measures and emergency preparedness and response plans (Annex IV, Article 12). Within the broader international legal regime, the Protocol - through this Annex - defers to the acknowledged expertise of other pieces of international maritime law. The nexus is important for underlining the legitimacy of this regime. Unfortunately, in terms of effectiveness there is little incentive for states to cooperate because the chances of being discovered breaching these regulations is minimal given the circumstances of Southern Ocean travel.

Annex V

This Annex describes the Area Protection and Management provisions which replace the constantly reviewed and updated protected areas system. The values are stated quite simply in Article 2:

> For the purposes set out in this Annex, any area, including any marine area, may be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area. Activities in those Areas shall be prohibited, restricted or managed in accordance with Management Plans adopted under the provisions of this Annex.

The reasons for designating Specially Protected Areas (SPA) and Specially Managed Areas (SMA) are for: '...outstanding environmental, scientific, historical, aesthetic or wilderness values, any combination of those values, or ongoing or planned scientific research' (Annex V, Article 3.1). It is promising to note the inclusion of aesthetic and wilderness values in the Protocol's eco-management blueprint. In line with good environmental practice, the Treaty Parties have stated their values up front, followed by provisions for tailoring management plans to suit. Also of note is the fact that any Protocol Party, the CEP, SCAR or CCAMLR can submit a management plan for consideration (Annex V, Article 5). CCAMLR must agree, however, to a marine SPA or SMA within its area of jurisdiction (Annex V, Article 6.2). Management Plans will be adopted through the Antarctic Treaty Consultative Party Meetings procedure. Thereafter permits must be obtained to enter SPAs (Annex V, Article 7).

Article 13

Article 13 of the Protocol contains substantive clauses dealing with compliance. The Antarctic Treaty System intends the Protocol to apply not only to those states party to it, but to *any* state. This is consistent with the Treaty's Article X, which states that no-one should engage in any activity in the Antarctic contrary to the principles or purposes of the Treaty. The wording of Article 13 of the Protocol is necessarily hortatory:

> 1. Each Party shall take *appropriate* measures *within its competence*, including the adoption of laws and regulations, administrative actions and enforcement measures, to ensure compliance with this Protocol.
>
> 2. Each Party shall exert *appropriate* efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity contrary to this Protocol.

(Article 13, emphasis added)

This compliance is a voluntary arrangement, relying on self-regulation by Parties being fully aware of how other Parties conduct their affairs (Article 13.3) and exposing dissenters from within or outside the System. It is not made explicit how, exactly, outsiders will be discouraged from performing unacceptable actions within the Treaty area, but the assumption is that the first recourse is through diplomatic protest.

There is a measure of accountability here, but it is no more or no less than what it states: an entreaty to all states to abide by the regime's regulations. This raises interesting questions about the ability of the Antarctic Treaty System to be considered an objective regime.[269] The development of customary international law with regard to the Antarctic and the obligations upon third states has not found favour in international law to date, primarily because it has not been put to the test.[270]

Article 14

Article 14 contains a further procedural tool for encouraging compliance with the Protocol. It provides for observers to carry out inspections of the stations, their logistic support facilities and records (Article 14.3). This is allied to Article VII of the Antarctic Treaty, which states that: 'Each observer...shall have complete freedom of access at any time to any or all areas of Antarctica' (Treaty Article VII.2). A major advance in this inspection procedure concerns reporting. The inspectors' reports are to be circulated throughout the System and are to eventually become public record (Article 14.4). This once again adds to the accountability of the Treaty System.

One must be realistic about the System's transparency, however. In a democratic country like Australia, it may be a relatively simple matter to obtain or view copies of these types of documents. However, not all Antarctic Treaty States have such liberal public access laws. Furthermore, while the Freedom of Information Act may be of assistance in some cases, information relating to international treaties usually attracts an exemption from public disclosure.[271]

Article 15

The Madrid Protocol cannot prohibit accidents. What it can and did in fact do, is to make provision for emergency response action and the drafting of contingency plans. Article 15 places the onus on the Parties to provide prompt and effective response action to any emergency occurring from the conduct of an 'authorized activity'. Authorized activities are defined in the Antarctic Treaty's Article VII.5 as activities relating to expeditions, stations and the movement of military personnel originating from the territory of a Treaty Party. Advance notice must be given for these activities. The wording of the Protocol's Article 15 does not preclude the Parties from responding to the threat of adverse effects on the Antarctic environment from *unauthorized* activities, however, as 15.1(b) states that each Party agrees to:

> (b) establish contingency plans for response to incidents with potential adverse effects on the Antarctic environment or dependent and associated ecosystems.

Indeed it would be inappropriate for the Protocol Parties *not* to respond to incidents arising out of unauthorized activities. This introduces the sometimes contentious issue of tourism in the Antarctic.

Although there is only a modest tourism effort in the Antarctic Treaty Area, the issue is one which has regularly appeared on the agenda of Treaty Meetings since 1966 when Recommendation 27 of Meeting IV acknowledged that '...tourist activities may prejudice the conduct of scientific research, conservation of fauna and flora and the operation of Antarctic stations' (Heap 1990a:2601). With regard to the Madrid Protocol, the assumption is that if a tourism venture departs from the territory of an Antarctic Treaty State, prior notice is given and the venture thus becomes an authorized activity which then becomes subject to the EIA process. If, on the other hand, the point of departure is the territory of a state not party to the Treaty, a Pandora's box of legal and political issues regarding customary law, state responsibility and jurisdiction is opened.

The Treaty Parties have partially dealt with tourism by making a Recommendation at their XVIIIth Meeting in 1994 (Recommendation XVIII-1). The Recommendation contains two annexes: 'Guidance for Visitors to the Antarctic', and 'Guidance for Those Organising and Conducting Tourism and Non-governmental Activities in the Antarctic'. These documents simply reaffirm the environmental principles of the Treaty and the Protocol and urge all who are involved with tourism to abide by the rules laid out therein. This falls a long way short of an annex on tourism that some Parties thought desirable. However, the Treaty Parties have chosen to allow the industry to be largely self-regulatory and further, expect that authorized activities will be governed by the EIA process and by the domestic laws of signatory states. In this sense it would seem that a tourism annex is unnecessary for several reasons: it cannot be justified in terms of effort and expense since the tourism industry is modest relative to tourism elsewhere; and it cannot regulate against states which are not bound by the Treaty or the Protocol in any case. Parties to the Treaty and the Protocol are bound by the EIA process, which requires assessment of all activity, including tourism, and in which cumulative impacts could be measured and monitored. This is the end of the tourism story as far as the Treaty System is concerned, for the moment at least.

Article 16

In light of this rather economical treatment of Antarctic tourism, another problem arises which has the potential to cause the Protocol Parties headaches in the future. That is the issue of liability. Under Article 16, the Parties are obliged to: '...elaborate rules and procedures relating to liability for damage arising from activities taking place in the Antarctic Treaty area' (Article 16).

Liability was a central but unresolved issue under CRAMRA, but unlike CRAMRA, the Protocol's operation is not made conditional upon the adoption of a liability annex. There are, however, compelling reasons for having liability provisions in place and the Parties are attempting to conclude such a regime.[272]

Unfortunately the Treaty Parties have become bogged down with questions of interpretation. This was discussed at the XVIIIth Meeting in Kyoto in April 1994. The Consultative Parties recognized the importance of the exchange of information on domestic enabling legislation in helping to harmonize interpretation of the Protocol, yet due regard was also given to the impossibility of uniformity '...given different national legislative approaches' (ATCM/WP 37 1994:8). With only eleven of the requisite 26 ratifications deposited to date, and perhaps a few more to be expected at the time of the next meeting in May 1995, the Parties are not under any pressure to complete this task with haste.[273] Indeed no time limit has been set in Article 16 for the adoption of liability measures.

A liability annex will add important credibility to the Madrid Protocol, but negotiating one will not be an easy process. Apart from making choices on the legal mechanics of such provisions as the standard of liability (strict, absolute or fault-based), whether or not to allow excuses and defences, the types of remedies (injunctions, compensation, restoration) and a suitable forum for adjudicating claims, the Treaty Parties are faced with another dilemma related to the issue of sovereignty. They will need to determine who the appropriate plaintiffs are. Should they, for instance, be only Antarctic claimant states whose territory or interests have been damaged? Should the plaintiffs be only those states which have incurred the costs of cleaning up and restoring the environmental damage caused by a third party? Should the plaintiffs be all of the Antarctic Treaty Parties jointly? What implications does this have pursuant to the Treaty's Article IV on maintaining the *status quo* of sovereignty claims? (Blay & Green 1995).

This issue, coupled with who can be pursued as defendants, has the potential to be as contentious in the context of liability as the issue of mining royalties was under CRAMRA. There are no quick answers, as the experience with CRAMRA indicates, and the formation of a liability annex will take careful consideration and possibly compromise.

Article 25

Lastly, one of the most important substantive provisions as far as the mining prohibition is concerned, is Article 25 on modification or amendment of the Protocol. Deferring to Article XII of the Antarctic Treaty, modifications or amendments may be

made at Antarctic Treaty Consultative Party Meetings by the unanimous agreement of all Consultative Parties. Modifications or amendments will enter into force when instruments of ratification have been received from all Consultative Parties (Treaty Article XII.1(a)). Non-Consultative Parties (referred to in Treaty Article XII.1(b) as 'any other Contracting Party') are then expected to ratify modifications or amendments. However, if one of these Parties subsequently fails to ratify within two years after the entry into force of the modification or amendment, that Party will be considered to have withdrawn from the Treaty (Treaty Article XII.1(b)).

In general terms the Protocol is also modified or amended in this way. Exceptions are made for its Annexes, which may also be modified or amended in any manner so nominated in an Annex (Article 25.1). A review conference may be called, if requested, after 50 years of operation of the Protocol (Article 25.2) but it is not obligatory that amendments are made or the mining ban lifted in this forum.

With respect to Article 7 and the mining prohibition, however, there are more stringent modification rules:

> 5. With respect to Article 7, the Parties agree that the prohibition on Antarctic mineral resource activities contained therein shall continue unless there is in force a binding legal regime on Antarctic mineral resource activities that includes an agreed means for determining whether, and if so, under which conditions, any such activities would be acceptable. This regime shall fully safeguard the interests of all States referred to in Article IV of the Antarctic Treaty and apply the principles thereof. Therefore, if a modification or amendment to Article 7 is proposed at a Review Conference referred to in paragraph 2 above, it shall include such a binding legal regime.

A three-quarters majority of Consultative Parties, but including all Consultative Parties at the time of the original signing of the Protocol, must both adopt and ratify a Review Conference amendment or modification for it to enter into force. Theoretically, if an amended CRAMRA were resurrected, which subsequently included claimant state mining royalties and the other concessions that the claimants failed to secure in the original Convention, mineral resource activities could proceed. The general view of the mining prohibition, therefore, is that it extends for a minimum period of 50 years after the ratification of the Protocol.

Considerable space has been given to examining these substantive provisions of the Madrid Protocol because of their potential importance as models for other regional regimes of ecosystem protection. This will be further discussed in the final chapter.

3.3 Questions of Legitimacy

In analyzing the formation of the Madrid Protocol regime for ecosystem management, as a component of the larger Antarctic Treaty System, it is necessary to ask a range of questions dealing with the nature of regime formation, the merit of the actors, the extent of community acceptance, external linkages and the overall adaptability of the System from which it originated.

The Antarctic Treaty Parties themselves formed this new regime. Historically they had assigned themselves a custodial role over the Antarctic, in general terms, with some states actually claiming sovereign territorial possession of parts of the continent. The existence of these claims is a fact in law and as such cannot be disputed. Furthermore, the Antarctic had not been legally declared the common heritage of mankind, a world park, world heritage area or any other type of commons space, despite much rhetoric to this end.[274] The Antarctic Treaty Parties were, historically and legally, the rightful stakeholders. This does not mean, however, that there have not been challenges to the legitimacy of the Antarctic Treaty System, both external and internal. There are two useful examples of these challenges: the 'Question of Antarctica' in the United Nations (external), and the dumping of CRAMRA (internal).

3.3.1 Challenges to the Treaty System's Legitimacy

The external challenge began in the early 1980s and continued throughout the decade. In the 20 years between 1960 and 1980, the Treaty System had 22 signatories, six of which had acceded to the Treaty between 1971 and 1980. But from 1981 to 1990 this additional membership rate nearly tripled, with another 17 States signing the Treaty. Chief among them were China and India, both of which quickly became Consultative Parties. India achieved this in record time, ratifying on 19 August and becoming a full Consultative Party just three weeks later, on 12 September 1983. China took a little longer, from ratifying on 8 June 1983 to gaining full decision-making status on 7 October 1985. Having both China and India on board, along with the Soviet Union, the United States, the United Kingdom, France, Germany, Brazil and Japan meant that the Antarctic Treaty System represented the demographic, geopolitical, economic and ideological force of the world. Therefore, throughout the challenge to its legitimacy waged in the United Nations General Assembly, the Antarctic Treaty System was more than adequately prepared and capable of defending itself.

Spearheaded by a persistent, sometimes iconoclastic Malaysia on behalf of developing countries collectively, the UN regularly discussed the 'Question of Antarctica' each year at its General Assembly, beginning with the 38th session in 1983. The line of argument was that the developing countries wanted the Antarctic to be declared the *common heritage of mankind*, under UN care. This was a remnant of the post-colonial push for a new international economic order for developing countries, and translated into a greater participation in Antarctic affairs by them and a share in Antarctic resources to them. These states had the numbers in the General Assembly to force the adoption of resolutions to this end. This was almost totally ineffectual because, while the UNGA did make many resolutions imploring the Treaty System to embrace the interests of developing countries, such resolutions were not binding on the Treaty states - nor most certainly on the Treaty System. This did not mean that the ATS ignored the challenge, however, as evidenced by India and China's rapid rise within the System and the large increase in Treaty Parties during the 1980s.

CRAMRA can be cited as a case of both internal and external conflict. Simply put, many of the Treaty Parties wanted to be able to exploit Antarctica's non-living resources in the future. Certainly they approached this with great caution and forethought, concluding CRAMRA *before* mining or even commercial prospecting began. The mineral activities regime was, in many respects, adequate in terms of both regulating activity and providing protection for the Antarctic ecosystem.[275] Given the chance, CRAMRA may well have promoted an acceptable equilibrium between the environment and development. Motivated in part by the persistent UN scrutiny of the System's operations, CRAMRA included an acknowledgment of the special situation of developing countries Party to the regime (CRAMRA Preamble, Articles 6 and 29). In so doing, the hierarchical elite of claimants and Consultative Parties gave some ground without compromising their own status: an action which was perceived as enhancing the System's overall legitimacy (Zou 1993:245).

The internal challenge to the System's legitimacy manifested itself through the recalcitrance of Australia and France over CRAMRA, which could very nearly have brought the System undone. The fact that under CRAMRA potential prospectors would not be issued permits until a liability annex was in place, highlighted the fact that ecosystem damage was envisaged as a consequence of mining activity. The Antarctic Treaty Parties were aware, through their links to such fora as SCAR and CCAMLR of the nature of potential threats to the Antarctic ecosystem. In addition, the environmental movement was pushing the three-Es barrow of natural resources management – ecology, economics, and emotions; the developing countries were lobbying for participation and common heritage; and the scientists were emphasizing the integral importance of the polar regions in the Earth's natural processes.[276]

Crucial to their studies was a pristine environment, which could not be guaranteed if mining activities were to proceed. Actual visible pollution was confined to the immediate vicinity of scientific stations, and because Antarctica is a huge continent and the Southern Ocean expansive, the conduct of scientific endeavour, while certainly having some impact, was considered negligible in terms of ecosystem harm. The global obsession with *greenhouse* and *ozone* and *climate change* made it imperative that the System take stock of the role Antarctic science played in providing answers to these scientific puzzles.

The dilemma is best summed up by the words the Treaty Parties themselves used in the Preamble to the Protocol:

> Convinced of the need to *enhance the protection of the Antarctic environment* and dependent and associated ecosystems;
>
> Convinced of the need to *strengthen the Antarctic Treaty system* so as to ensure that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;
>
> Bearing in mind the special legal and political status of Antarctica and the *special responsibility of the Antarctic Treaty Consultative Parties* to ensure that all activities in the Antarctic are consistent with the purposes and principles of the Antarctic Treaty;
> Recalling the designation of *Antarctica as a Special Conservation Area* and other measures adopted under the Antarctic Treaty system to protect the Antarctic environment and dependent and associated ecosystems;
>
> Acknowledging further the unique opportunities Antarctica offers for scientific monitoring of and research on processes of *global* as well as *regional* importance;
>
> Reaffirming the *conservation principles* of the Convention on the Conservation of Antarctic Marine Living Resources;
>
> Convinced that the development of a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems is in the *interest of mankind as a whole;*
>
> Desiring to supplement the Antarctic Treaty to this end;...

(Madrid Protocol Preamble, emphasis added)

The overwhelming message from the Preamble is that the Parties collectively perceived their role as custodians of the Antarctic as a very serious responsibility. The terminology 'Antarctic environment and dependent and associated ecosystems' is an holistic interpretation not previously so well articulated in Antarctic Treaty System language. The Preamble emphasised the omnipotence of the Antarctic

Treaty System and its environmental principles, the Consultative Parties, the global role of Antarctic science and the value of the Antarctic to all humankind.

There was thus an underlying assumption of competency on the part of the actors involved in the Protocol negotiating process. The Antarctic Treaty Consultative Parties had been managing Antarctic affairs for over 30 years and were well credentialled in this area. They were not an elite club. Additional Contracting Parties had an opportunity to become decision-makers by displaying active interest in Antarctic affairs. The modern view of participation and eventual elevation from Contracting to Consultative status is that this is as likely to be achieved through joint-venture research with a better-established Antarctic scientific state, as it is through making the huge financial commitment to launch individual state scientific programs. Therefore, in theory any state which desired to participate in Antarctic affairs, was at liberty to do so. This gave legitimacy to the process of regime formation, the actors involved and their representation of the interests of the global community.

In addition, the holistic ecosystem approach of the Protocol embraces the whole of the Antarctic Treaty area and a wide, though not exhaustive, range of possible activities which could incur ecosystem harm, further adding to process legitimacy and to responsibility for the global ecosystem.

Moreover, the area of application of the Madrid Protocol embraces the whole of the Antarctic Treaty and CCAMLR Areas.[277] The activities regulated by the Protocol embrace all human activity in the Antarctic and the Southern Ocean south of the Convergence, although there is the issue of its application to third parties outside the System still to be tested.

The problem the Treaty Parties had to deal with was essentially two-tiered: regional contamination and transfrontier global degradation. The regional contamination is dealt with by the Protocol, facilitating the continuing conduct of scientific research in a near-pristine environment. This will assist in finding solutions to the transfrontier dimension of the problem. Therefore, on these bases the boundaries of scope of the regime can be said to embrace both the essence and the periphery of the problem.

The legitimacy of the Protocol is also found in the linkages it draws with other components of the international order like MARPOL and the International Convention for the Regulation of Whaling. However, if there is to be any criticism of the ATS in this regard, it is the fact that no account is taken of the efficacy of those other pieces of international law. It could be argued that if the Treaty System was thorough in its responsibilities for the Antarctic environment and dependent and associated

ecosystems, it would create its own regulations regarding whaling or marine pollution in an effort to *strengthen* the other international law. The overlapping regimes would merely create *greater* obligations upon the Treaty Parties.

Notwithstanding, the conclusion is that the process of forming a regime for the comprehensive protection of the Antarctic environment and its dependent and associated ecosystems, as an additional component of the Antarctic Treaty System, was a legitimate one and has been viewed as such by the international community. Detractors such as Malaysia have an opportunity to join the Antarctic Treaty System should they so desire. They have chosen not to. But the System does not *exclude* them.

3.4 Questions of Effectiveness

The Madrid Protocol has not yet entered into force, therefore it is premature to speculate too broadly on its potential effectiveness. However, the preceding discussion has shown that there is a clear commitment on the part of the Treaty Parties to protect Antarctic ecosystems to the best of their ability. Critics of the Madrid Protocol tend to focus on pedantic points like its provision for sovereign immunity for government vessels, divergent interpretation, provisions which enable the taking of fauna and flora for scientific purposes and so on. But it must be noted that, conceptually at least, the merits of the Protocol far outweigh these criticisms. In terms of international relations and international environmental law, the Protocol represents the most comprehensive regional protection instrument in existence. Furthermore, in time the Parties will find their own place within the rules and regulations. To expect all Parties to be in perfect harmony with each other over interpretation, for instance, is simply asking too much of diverse political, ethnic and ideological entities. Rather, the Antarctic Treaty System represents a framework of rules and procedures within which the Madrid Protocol will be built upon or reshaped according to experience, interests, expediency and commitment, with the passage of time.

Notwithstanding, it is true that the Protocol does create high expectations, and it remains to be seen how well these can be met in pragmatic terms. This raises two important questions: i) how has the Protocol improved Antarctic environmental protection? and ii) how well has it dealt with the issue of mineral resource activities? Once the Protocol enters into force, it will have the full force of an independent legal instrument. In addition, it is a framework document which has the flexibility of being amended as necessary, particularly through the Annex system. The Treaty System has

brought together its *ad hoc* regulations into one coherent, comprehensive arrangement and this has no doubt been a progressive step in Antarctic environmental protection. Moreover, even if the Protocol does collapse after 50 years and mineral resource activity becomes inevitable, the Protocol review mechanism requires that some kind of regulatory instrument should be in place before such activity proceeds. As already discussed, the requirements under CRAMRA were inordinately strict in terms of getting to the stage of actually conducting mining activity. There is no reason to suggest that the case will be any different 50 years hence. Of course, if the whole Antarctic Treaty System was to break down completely over the issue of mineral resource activities, any theories about how the former Parties might react would be turned upside-down.[278]

The impacts of the designated courses of action are not yet known. It is too early to tell, for instance, if the increased workload on the state operators will stifle the progress of scientific endeavour. However, there are encouraging signs that the Antarctic Treaty Parties are taking their Protocol obligations seriously. The Inspectors' Report at the Treaty meeting in Kyoto in 1994 concluded that: '...substantial progress is being made in implementing the provisions of the Protocol' (ATCM 1994:16). While neither the United States nor New Zealand, for example, had ratified the Protocol at that stage, both had conducted IEEs and CEEs.

Returning to the template on page 62, it can now be stated that in terms of effectiveness, there is the potential for individual state behaviour to be modified quite considerably by the regulations of the Protocol. Antarctic Treaty Parties are required to ratify the Protocol, and for many states this will require the passage of domestic enabling legislation as the first phase. In addition, collective behaviour will also be modified by the rights and obligations which attend each Party to the Protocol. They have an extra duty of care imposed upon them as their custodial role has now been expanded to embrace ecosystem protection against all human impacts. There will be no such thing as *good* or *bad* activities any more. Any activity which passes the EIA procedure will be acceptable because the Treaty Parties have deemed it so within the specific purview of the EIA process. Because all decisions in Antarctic Treaty Consultative Party Meetings are taken by consensus, the decision to allow an activity to proceed will be a collective one. For the purposes of assessing liability, moreover, the Treaty Parties will most likely adopt the principles of the EIA process as fundamental in their definition of the type of conduct which constitutes damage. The assumption will be that if an activity clears the EIA process and its impacts, as envisaged, are deemed acceptable, then no liability is indicated. The converse is also

true: if an activity clears the EIA process but its impacts are greater than what was envisaged, then liability may be indicated (Blay & Green 1995).

In seeking to analyse effectiveness as a variable, it is necessary to determine the Protocol's objective and how appropriate this is to the problem's solution. The objective was stated simply as the comprehensive protection of the environment and its dependent and associated ecosystems. The anticipated phases of progress towards this outcome are to be the EIA process, the provisions contained within the other Annexes and their constant revision. Once these processes have been in operation for some time, it should be possible to observe quantifiable outcomes. The Protocol has not yet entered into force but already the Treaty Parties can be seen to be observing its principles. There is room for optimism that this trend will continue. If the trend is indicative of future behaviour, then effectiveness as a measure of the actions taken to comply with the objectives of the Madrid Protocol will become quantifiable in the future.

3.5 Questions of Accountability

Accountability (both internal and external) must stem from the procedural and substantive conditions built into the regime. Accountability cannot be thoroughly tested until, or unless, a breach occurs. Theoretically however, the reporting procedures give a considerable measure of transparency to the operations of the Protocol and may in fact be the mechanism through which intended breaches are circumvented.

Compliance and enforcement are other issues entirely. The Treaty Parties have put in place the best provisions they can under the circumstances when policy is adopted by consensus: those of voluntary compliance. In the absence of polar police, they can do little else. If the states perceive their obligations to be legally binding, *opinio juris*, and they accept the Treaty and Protocol *pacta sunt servanda*, then there is no need for the system to act otherwise in terms of legal compliance. However, regulations governing liability for harm will help strengthen the overall intent and effect of the Protocol.

3.6 The Protocol and Responsibility for the Global Ecosystem

In terms of acknowledgment of the various components which comprise this study's definition of responsibility for the global ecosystem, the Madrid Protocol scores reasonably well. It will most probably adopt the basic premise of attaching liability to the polluter as a fundamental consideration in the formation of its liability annex, although this is by no means certain. Unless such an annex is established, however, the legal issue of who pays for intentional or unintentional harm to the Antarctic environment and its dependent and associated ecosystems remains unresolved. In fact, because authorized Antarctic operators are state operators (with the exception of tourist ventures) who are responsible for the costs associated with conducting their activities in a manner consistent with the Protocol, it appears that in the absence of a liability annex, it is the *community* which pays, rather than the polluter.

The concept of sustainable development is tacitly addressed in the Protocol. Despite the fact that development as such is not envisaged in the short term, the main thrust of the Protocol is environmental protection which must be the underlying principle of sustainable development. The Protocol refers to the 'Antarctic environment and dependent and associated ecosystems', thereby implying an ecosystem-orientated approach to environmental protection. Humanity is an integral part of any ecosystem and although humans are aliens in the Antarctic environment, they benefit *indirectly* from responsible eco-management there.

Similarly, as discussed above, the broad implications, if not the language, of the concepts of both common heritage and intergenerational equity have been embraced in the rhetoric of the Protocol's Preamble and elsewhere.

Importantly, through a nexus to CCAMLR's conservation principles (Preamble), and the EIA process of the Protocol, a precautionary approach to all human activity in the Antarctic is also taken on board. The EIA process particularly is of paramount importance since it seeks relative assurance that harm will only be of an acceptable level *before* the activity is conducted.

Outside these five specific components – the polluter pays principle; an ecosystem-orientated approach; common heritage; intergenerational equity; CCAMLR's conservation principles; and a precautionary approach – a general responsibility towards the Antarctic ecosystem is in part addressing a global ecosystem responsibility because of the System's acknowledgment of the role and value of the Antarctic in

global processes. However, there does remain room for scepticism about the Antarctic Treaty System considering its response in the United Nations to the 'Question of Antarctica'. Its defence in the UNGA was far superior to the challenge waged by the Malaysian-led lobby. This underscores the point that not every state is benign towards the System and its elitist hold over all things Antarctic. Despite a virtual back-down by the UN challengers, the feeling remains that the System provides only symbolic respect for the good of all humanity, and that its fervent desire to retain power in the Antarctic is more related to politics and sovereignty than it is to these more egalitarian principles.[279]

3.7 Conclusions

The Antarctic Treaty System began operating at a time when there was little environmental conscience in the international community, but almost at once the Parties to the Treaty recognized the unique position they held with regard to the administration of the Antarctic. The System began in a rudimentary way with the Treaty of 1959 and it has since evolved into perhaps the most sophisticated regional environmental management plan in existence in international law.

The Treaty itself contained several enduring principles: demilitarization, non-nuclearization, freedom of scientific investigation and the containment of sovereign claims. This artificial impasse of reconceptualized sovereignty created by the Treaty's Article IV has facilitated the growth and development of a substantial system of Antarctic administration, not the least of which is the environmental protocol.

Early attempts at environmental protection were reactionary and usually issue-specific; notwithstanding, the conclusion of CCAMLR brought a new ecosystem ethic embracing both conservation and rational use, and the idea that fisheries harvesting should be conducted in a precautionary manner. CRAMRA further developed these approaches, albeit with regulation of mineral resource activities only.

The Madrid Protocol is a *comprehensive* arrangement for ecosystem protection which fulfils most expectations of current mainstream environmentalism. It will never be comprehensive enough to satisfy eco-radicals; conversely the more conservative factions of state politics, especially the mining industries, are never likely to accept the mining prohibition. But for the moment at least, the intention of the Treaty System is to strengthen its effectiveness by adopting liability provisions.

The process of getting to this stage involved all of the key actors identified in Chapter 1 as being legitimate stakeholders in the making of Antarctic environmental policy and law. The only key actor which did not fit snugly into the Antarctic scenario was the United Nations. Despite references to this body's principles and purposes throughout the Treaty and subsequent pieces of Antarctic law, along with recognition of the value of expert groups under the auspices of the UN to the functioning of the Treaty System, the political movement within the UNGA has been kept at bay by the ATS. The minimum application of the rules of coexistence between sovereign states has been overturned in the Antarctic, through the existence of Article IV of the Treaty. The NGO movement was successful in helping to overturn CRAMRA, although the traditional *disaster perspective* which drove the environmental movement did not necessarily apply to the Antarctic, with the exception of potential climate change and ozone depletion. Accordingly the scientific community was particularly prominent in Antarctic affairs.

Certainly the process of achieving comprehensive ecosystem protection in the Antarctic was not without its difficulties, and many issues remain unresolved. Compromise and cooperation have been the underlying features, as indeed they are with international affairs generally. Unless states seek to impose their will upon others with coercive behaviour, accommodation of each other's interests and priorities is a necessary factor leading to appropriate and acceptable solutions to cross-sectoral problems. This has been exemplified in the Antarctic.

At the other end of the planet, however, the Arctic nations find themselves in much the same position today as the Antarctic Treaty Parties did in 1959.

4

Towards An Arctic Eco-Management Regime

Introduction

In complete contrast to the established Antarctic Treaty System, the situation in the Arctic is immature in terms of holistic ecosystem management. The Arctic is a region of great political, economic and social diversity characterised by the domestic priorities of sovereign states. While that same diversity is also true of the states which participate in the Antarctic Treaty System, these variables have historically played an important role in the Arctic in inhibiting the development of an appropriate regional ecosystem management regime. As such, this also highlights the lack of progress, until recently, towards taking responsibility for the global ecosystem.

The fact that the Arctic is *inhabited* is a fundamental difference between the two polar regions. It is all very well to credit the Antarctic Treaty Parties with achieving outstanding levels of multilateral cooperation in the field of eco-management, but it must be borne in mind that they did not have to take account of indigenous people in their policy- and law-making processes. The Arctic is home to many disparate groups, including ethnic nations which for many centuries have maintained their existence in a fairly harmonious way within their homeland ecosystems. There are also immigrant workers and bureaucrats who attend the vast industrial centres of the polar north, of Russia and Canada in particular; and there are large numbers of service personnel deployed to the military complexes which provide northern defences.

The past two decades have heralded major environmental challenges to the viability of the homelands of Arctic people. The worst of these are pollutants derived from ocean dumping, Arctic haze and acid rain; and threats to the habitats of subsistence species. These environmental challenges arise partly as a result of *ad hoc* sovereign government policies, and may originate outside the Arctic region. However, the parallel developments of a scientific organization and an environmental regime to deal with the region's problems at a planned, inter-state level indicate an encouraging trend

in the field of Arctic politics towards responsibility for the *Arctic* ecosystem at least. If this can be achieved, another regional component of the global ecosystem will have been addressed.

Apart from the kind of détente represented by the 1920 Treaty of Spitzbergen and the 1973 Polar Bear Convention, the development of pan-Arctic solidarity has historically been slow and restrained. But this situation is in transition. The remoteness and inhospitability which once afforded the Arctic a degree of protection and anonymity are now less of a shield because of the development of sophisticated transport and communications technology, cooperative efforts at regional problem-solving and resource exploitation, and the gradual disintegration of the concept of enmity between the two Arctic superpowers.

The current emergence of an Arctic environmental regime is therefore useful as a case study because it represents a distinct paradigm of fresh diplomatic approaches to the unique challenge of ecosystem management that the Arctic nations have never before addressed.[280]

This Chapter investigates the nature of Arctic ecosystem management, specifically the Arctic Environmental Protection Strategy: what it contains and how its legitimacy, effectiveness and accountability may be interpreted in these formative stages of an emerging Arctic ecosystem management regime. Importantly too, it investigates the level of responsibility for the global ecosystem exhibited in the Arctic. The Chapter is prefaced by a description of the genesis of what many see as a confidence-building measure of major significance: the development of the International Arctic Science Committee (IASC). First however, in order to put these events into context it is useful to note the kind of legal and administrative arrangements already in existence in the Arctic.

4.1 Existing Institutional Framework

There is no political institutional framework specific to the Arctic region as a whole.[281] As described earlier in Chapter 2, complex alliances between the Arctic states do exist on a variety of levels, but pan-regional regime-building has been resisted as states historically resist such efforts at institutionalizing their foreign affairs.

The Arctic region is unique in the sense that it encompasses only the northern reaches of the eight sovereign states. As such the Arctic is characterized politically by extra-regional variables which determine northern policy (Griffiths 1989:212). In addition,

the bulk of political activity relating to the Arctic is minimalist, reflecting the autonomy and self-interest of the eight Arctic states expressed more readily through unilateral and bilateral action, than through multilateral cooperation. Therefore the notion of the Arctic developing into an integrated political unit is problematic, but perhaps not as improbable as was once thought.[282]

Prior to the contemporary environmental impetus investigated in this study, the Arctic states had successfully managed to hold regional regime-building at bay by simply toying with ideas like an Arctic Region Council since it was first proposed in 1971.[283]

An Arctic Region Council, or Arctic Council as it is also called, is based on the premise that there is a need for a coordinating international body in the circumpolar region - a *political* forum (Slipchenko 1992:1). From Cohen's original proposal, the Canadians have taken this initiative to the greatest lengths. In 1990 the Canadian Government created an Arctic Council Panel to explore how such an organization might work and to develop government and public support for it (IASC 1992:3). The panel's work, which is funded by a private grant, is on-going but it will not be an easy task to sell the idea to the other states (Fenge, pers.comm).

In seeking to find some common political ground on which to place the concept of an Arctic Council, it is difficult to reconcile the panoply of attitudes, given the suspicion surrounding the Russian Federation, and the peculiar psychology of US/Canadian relations and those between the Nordic countries.[284]

The attitude of the various Arctic states to the Council concept is indicative of the pervasive undercurrent of reticence when it comes to cooperative circumpolar politics. As a Canadian initiative, the concept of a Council evokes strong reactions from other Arctic bureaucrats, particularly those from the United States, who have taken a contradictory stance by sometimes supporting the idea and sometimes not.[285] Simmering tensions between Canada and the United States must be considered serious in the sense that many Canadians in fact regard the United States as '...a principal threat to maintenance of Canadian sovereignty in the Far North' (Young 1992:201). The electorates are sometimes confused and suspicious of both Governments.[286] This is all the more serious when one considers that Canada has strong political and economic connections with the US.

As a consequence of the traditional reluctance by Arctic states to holistically embrace regional political issues, there is no specific pan-Arctic institution which might be used as a template for the building of an Arctic ecosystem management regime.

4.2 Existing Legal Framework

The existing Arctic legal framework further illustrates the point that the types of cooperative relations have historically been minimalist, that is, bilateral, with some multilateral instruments, but few pan-Arctic-specific cooperative measures (See Appendices 4 and 5).

Apart from the 1920 Treaty of Spitzbergen and the 1973 Polar Bear Convention, few new Arctic legal regimes have survived the test of time, or even the initial proposal stage.[287] The problem has been, and still is, that each Arctic state has its own peculiar set of characteristics which distinguishes it from the others, and they each, naturally, wish to retain the kind of autonomy represented by *not* having pan-Arctic institutions, organizations, and regimes. In other words, they have chosen to perpetuate minimalist relationships, despite their commonwealth of problems and convergence of issue areas. Issue-specific areas like polar bear protection and organized management of scientific research have enabled a type of cooperation, but states are quick to point out that their mandate does not include more intense political issues which might require legal regulation.

Because the Arctic Ocean is considered a semi-enclosed sea, the cardinal global legal instrument pertaining to the marine Arctic is the 1982 Law of the Sea Convention. It is ironic, however, that when the LOSC entered into force in November 1994, the only Arctic state to have ratified it was Iceland (21.6.1985), albeit while making several declarations.[288] Prior to the LOSC entering into force, all Arctic states except the US had signed it and Sweden had made a declaration.

Part XII of LOSC elaborates general provisions for the protection and preservation of the marine environment, while specific Articles throughout the whole of LOSC deal with such issues as the continental shelf (Article 76); the 12-mile territorial sea (Article 3); the 200-mile exclusive economic zone (Article 57); ice-covered waters (Article 234), cooperation of states bordering on enclosed or semi-enclosed seas (Article 123); and the high seas (Article 87).

There are very few linkages between global legal instruments and the Arctic regional framework. The linkages which do exist are mostly of an insubstantial nature.[289]

In summary, there is no integrated, comprehensive legal or institutional framework for protection of the Arctic environment.

The next section will describe the processes which has culminated in a movement towards Arctic cooperation in the field of scientific research as the first step towards the development of an eco-management regime. In doing so, it will attempt to explain why regime-building, traditionally resisted by the Arctic states, has emerged.

4.3 Arctic Scientific Cooperation

Arctic scientific cooperation has undergone several quite distinct phases in its evolution, corresponding with the state of maturity of science in general; of prevailing global policies; and of Arctic science and politics in particular. These can be identified as an heroic age prior to the late 1870s, characterised by: i) the pursuit of national glory through polar discovery and exploration; ii) the coordinated effort of the first International Polar Year of 1882-83, which established the infrastructure for on-going research initiatives and the modern ethics of shared information and peer review; and iii) the utilitarian phase of science as an economic problem-solving tool during the rapid developments of the last few decades.

4.3.1 The Pursuit of Glory

Like the Antarctic, the Arctic too witnessed an heroic age of exploration. The great exploits in contemporary terms occurred in the late 1800s and early 1900s.[290] Each venture exposed more of the Arctic and its pristine, vulnerable ecosystems. Importantly, this heroic age was characterized by scientific endeavour, initially privately funded but later financed by state governments.

4.3.2 The Organised Pursuit of Knowledge

Karl Weyprecht coined the phrase, the 'international steeplechase to the North Pole' in reference to these largely uncoordinated attempts at glory represented in the heroic age of Arctic exploration (Roots 1984:11). Weyprecht, an Austrian physicist who was instrumental in the organization of the First International Polar Year (IPY) of 1882-3, considered then, rather heretically for his time, that '...small nations must be able to take part in arctic research...' and that results should be '...freely shared without discrimination...' because '...science is not a territory for national possession...'.[291]

Weyprecht's ideal had been to *coordinate* the steeplechase of polar exploration, to *plan* cooperative effort and to *share* observations, at the expense perhaps of some state prestige (Roots 1984:11). After much persuasion by Weyprecht and his disciples, an

International Polar Commission was established in 1879, principally to coordinate the IPY. Although Weyprecht died prior to the IPY of 1882-3, its conduct rested on these principles he had first proposed. The Polar Commission was disbanded in 1891 once its work had finished.

Fortuitously, the volcanic island of Krakatau in the Indonesian archipelago erupted after the IPY global observation stations had been established, thereby making it possible to track the atmospheric movement and distribution of Krakatau's volcanic dust clouds over the entire planet. This serendipitous event lent great credence to the concept of cooperative and coordinated scientific effort through such fora as the IPY. It turned science from an exclusive, domestic pursuit into a commonwealth, helping to promote the open and frank peer review which characterises science today (Roots 1984:13).

Two subsequent international events - the 1932-3 International Polar Year and the 1957-8 International Geophysical Year - were hailed as important examples of international cooperation in the field of scientific enterprise, the advancement of scientific knowledge and institution-building.

As a direct result of the International Geophysical Year (IGY), for instance, the Scientific Committee for Antarctic Research, SCAR, was created in 1958 as a non-governmental body seemingly unencumbered by the politics of the formation of the Antarctic Treaty regime, which followed one year later.[292] The Arctic missed out on becoming a second 'A' in 'SCAR' because at the time of its formation, the scientific priorities of Arctic states had more of a unilateral than regional focus. Why the Arctic was not embraced by SCAR remains unclear; but apparently the existing Arctic state infrastructures were thought adequate and the Antarctic thought more deserving as a focus for such a coordinating body as SCAR at that time (Roots 1988:9).

This is not to suggest that there was no unity in Arctic science. Other global scientific programmes were being undertaken in which Arctic scientists participated, including the International Hydrological Decade, the International Biological Programme, International Upper Mantle Study, International Year of the Quiet Sun and the International Magnetospheric Study. All of these programs had a particular relevance for the Arctic (Roots 1988:10).

4.3.3 Science as a Technical Problem-Solving Tool

During the 1970s and 1980s the Arctic was characterised by many cooperative scientific agreements. For example, accords existed between US/Canada, US/USSR,

Canada/USSR, Norway/USSR and Finland/USSR (See Appendix 5). However, the changing economic and political climate of the Arctic during those decades had a direct effect on the nature of international cooperation in science. Science became a useful tool for the advancement of technology and industry, and was thus of economic importance to domestic policy.[293]

Østreng has analysed this reorientation. In a presentation to a 1984 conference in Svalbard, Østreng noted that governments used taxes to support Arctic science for three reasons: i) strategic, military, and foreign policy; ii) economic; and iii) territorial. Further, he noted that science and policy were seen, in relation to these reasons, as being either: i) functional; ii) pragmatic; or iii) idealistic.[294] Speaking at that same conference, Roots commented that, with the exception of the Soviet Union, much more of the scientific activities in the Arctic were being sponsored by industry for economic reasons, in line with Østreng's functional category, than by governments for any reason[295] (Roots 1984:14). Therefore, according to Roots, government science agencies were losing their influence over the directions and freedom of science as the bureaucratic focus (and funding) shifted from scientific bodies, research councils and independent institutions to other agencies like energy and resource bureaux, which were more interested in the economic utility of scientific findings.

While science was not necessarily *poorer* for this reorientation, and while acknowledging the domestic benefits of *any* Arctic science, the changes had important implications for scientific cooperation at an international level (Roots 1984:14 - 15). Such implications will become more evident in the discussion on the formation of the International Arctic Science Committee which is to follow.

4.4 Towards a Regional Scientific Organization

The scientific community was to play an important role in Arctic regime formation. Increasing industrialisation of the Arctic, and of Central Europe and North America, was identified as contributing to massive transboundary environmental problems in the northern polar region. Safe marine navigation, resource exploitation and transportation, and the effects of living in extreme climatic conditions were among many related issues which were contingent upon information supplied by the scientific community. Ecosystem management in general, incorporating the protection of wildlife and their habitats, was closely linked to both the production of scientific knowledge about the biosphere and the acknowledgment of the value of traditional indigenous experiences in harmonizing with their ecosystems. First, though, the

scientific community needed to be well enough organized to investigate the fundamental nature of the ecosystems and then informed enough to make qualified judgments which would be useful in the policy process.

There were, in essence, two dimensions to the problem of Arctic ecosystem management. One was the uncoordinated, *ad hoc* nature of scientific endeavour; the other was the increasingly obvious real or perceived threat of environmental damage. Accordingly, in the Arctic there has been a parallel development of both a scientific organization and an environmental regime. The latter is seen as having been contingent upon the former, in the sense that without the confidence-building measures and without being able to readily and accurately identify environmental problems, formation of an ecosystem management regime may not have been possible. The first step in the regime-formation process was to coordinate Arctic science.

4.4.1 The International Arctic Science Committee

As illustrated in the Legal Framework (Appendix 5), there were many bilateral scientific agreements between the ice states but little in the way of pan-Arctic or even multilateral cooperation. The establishment of the International Arctic Science Committee (IASC) broke the spell.

IASC was established in 1990 as a non-governmental, circum-Arctic facilitator of cooperative scientific effort. It evolved following years of discussion about the role and importance of multilateral Arctic research and many failed attempts at organization-building in the interests of Arctic science.
The stated mission of IASC is to:

> ...encourage, facilitate and promote basic and applied interdisciplinary research in or concerned with the Arctic at a circumarctic or international level; and to provide scientific advice on arctic issues.

Its strategy is to:

- respond to initiatives;
- provide a forum;
- provide infrastructure;
- promote research;
- safeguard and exchange results;
- provide advice;

- promote access and sharing; and
- provide for the freedom and ethical conduct of science.

(IASC 1990)

The desire to establish an all-encompassing organization for the coordination and planning of Arctic science was real and widespread, and although several such organizations had been established in the past (Roots 1984:25-6), IASC represents the newest inter-disciplinary attempt at organization formation with respect to Arctic science. However, no indication of its performance with regard to its stated mission and strategies can yet be given. This is further discussed in section 4.4.4 at p.187.

4.4.2 A Chronology of Events

Within the framework of the changing nature of science and state policy, many scientific fora vigorously discussed the future of coordinated regional research in the international context throughout the 1970s and 1980s. Joint Arctic research between Norway, Canada, the US and USSR was mooted early in 1972 at the initiative of Norway. Following the UN Conference on the Human Environment in Stockholm in 1972, these four Arctic states assembled to discuss whether the recommendations from Stockholm which were pertinent to the Arctic could be implemented through an international mechanism. At the same time there was CHARLIE, the Committee for High Arctic Research, Liaison and Information Exchange, which was an informal group of scientists frustrated by the lack of formal cooperative measures needed to activate multilateral projects not able to be undertaken unilaterally (Roots 1984:25). But neither of these proposals endured or facilitated a substantial organization.

The Comité Arctique International (CAI) was one group which fared better. CAI was the result of intense negotiations following an International Symposium on the Polar Seas, hosted by Prince Rainier III of Monaco in 1979. With members from academe, industry and government, the Comité's stated objective was:

> ...to improve knowledge and understanding of Arctic areas and to that end promote research in different fields on an international and multidisciplinary basis.

(Roots 1984:25)

The Arctic Ocean Sciences Board was another organization which, although singularly marine in focus, advanced the drive for coordination in Arctic research. The AOSB was established in 1984 to provide a facilitating service for arctic and sub-arctic oceanographic research. It is, interestingly, an administrative service rather than a research entity *per se* (Roots 1984:26).

Of note is the fact that the USSR was not represented on either the Comité or the AOSB. Paradoxically it was largely through both Soviet intransigence and Soviet initiatives that the ball was set rolling towards the formation of IASC.

The turning point came in October 1987. The then President Gorbachev of the Soviet Union, speaking in Murmansk, said, with reference to the global value of Arctic scientific exploration, 'We have a wealth of experience here and are prepared to share it' (Gorbachev 1988:72). With these simple words Gorbachev, like the scientists who had been canvassing for some time, recognised the fundamental benefits of a pooling of resources and expertise with regard to not only scientific endeavour but also resource development (Gorbachev 1988:72). The Soviet President openly supported a joint Arctic research council and offered Murmansk as the venue for a proposed 1988 conference. This was seen as presaging an '...important and rare institutionalization of circumpolar cooperative relations' (Archer undated:5).

The Arctic states had already begun to address more seriously the need for a mechanism to facilitate Arctic cooperative science prior to receiving Gorbachev's official offer. They had held a preliminary international meeting in San Diego, USA, in June 1986. Then at the request of an informal consultative meeting held in Oslo in February of 1987, and attended this time by a representative from the USSR, a working group was formed to prepare a proposal for action. The group was composed of E Fred Roots (Canada), Odd Rogne (Norway) and Jorgen Taagholt (Denmark) and detailed its findings in a report dated November of that year.[296]

Drawing on the paradox that 'Non-Arctic countries...may be in a better position to play a leading role in research on major arctic scientific problems than countries or agencies with specific national or political arctic responsibilities...', the Working Group's recommendations were premised on two fundamental needs: i) science research requirements, and ii) policy and administrative considerations (Roots et al 1987:9).

In scrutinizing their conclusions about science research requirements, it is apparent that the Working Group considered the coordinated research of major scientific topics required *stimulation*; that *institutionalization* would help promote linkage and exchange of information; and that a multi-disciplinary *review mechanism* was necessary to ensure the good quality of Arctic sciences. In addition, the handling of data was seen to be a major concern, and it was recognised that Arctic data required *specialization*,

standardization and improved international and interdisciplinary *accessibility* (Roots et al 1987:9-11).

Policy and administrative considerations, however, were thought to be more problematic and would require inter-state cooperation on unprecedented levels. The Working Group thus proposed a closer liaison between scientists and administrators of both Arctic and non-Arctic states, whose plans, programs and priorities would benefit from this intercourse. Similarly, they proposed the international review of the effectiveness and progress of independent state activities.

The Working Group also perceived a need '...to develop a common approach to the relationship between scientific activities and the increasing use of polar regions for other purposes' (Roots et al 1987:12). Justification for this was based on the desirability of avoiding '...major differences between countries in their approach to scientific and non-scientific new activities in arctic regions...' in order to ensure minimum disruption to scientific studies or the environment. In other words, traditional uses of the Arctic should be dealt with 'in an organized way' (Roots et al 1987:13).

Finally, the Working Group considered that shared concerns about environmental protection, geopolitical priorities, Arctic technological development and logistics gave rise to the desirability of maintaining international networking between administrators (Roots et al 1987:14).

The conclusion of the Working Group was that in order to satisfactorily meet the needs of both the scientific community and the administrators with Arctic responsibilities, a non-governmental scientific committee should be established. It should be composed of state representatives serving in a personal rather than official capacity, and be modelled according to other regional committees of the International Council of Scientific Unions (ICSU), with which it may eventually seek affiliation. (Roots et al 1987:17). This organization would be supplemented by, but in no way related to, an intergovernmental forum on Arctic science issues, the organizational structure of which would be determined by the governmental authorities concerned. Major Arctic policy topics including relevant scientific studies; environmental protection and monitoring; resource development and exploitation; and the rights, responsibilities and involvement of indigenous Arctic people were envisaged as being the focus of this latter forum (Roots et al 1987:20).

The next step was to take the Working Group's recommendations to the countries concerned: the Arctic 8, on a formal basis, and others, on an informal basis. A

meeting was convened in March 1988 in Stockholm to discuss the future of Arctic scientific inquiry. It was attended by high-ranking members of the Arctic countries' polar research bodies, bureaucrats and academics. The keynote speaker was a member of the Working Group, Dr E Fred Roots. In his address he resurrected the eminent profile of Karl Weyprecht to reinforce the view that Arctic science would again benefit from a coordinated effort at the international level and that Weyprecht's principles were still valid (Roots 1988).

Perhaps the reason for this attitude was that Roots still perceived Arctic science as being so closely linked to state foreign policy and economic issues that governments might be reluctant to give strong support to developing international cooperation and coordination. This view was consistent with the large and continuing funding from industry which was being channelled into Arctic research. Significantly, Roots emphasized that the Arctic areas of different states often had more in common with each other than they had with the southern extremities within their individual state borders (Roots 1988:1). The migration routes of fauna, the weather, the sea and ice, magnetism and the aurora were all *transboundary* in nature. Arctic research, therefore, was of domestic, international and global importance, and regional cooperation within and across disciplines would seem to be an obvious consequence of this interdependence. Roots thus gave tacit recognition to the concept of responsibility for the global ecosystem by virtue of his holistic view of the Arctic and the global implications for Arctic science.

This Stockholm meeting agreed to form a working group to establish IASC, under the chairmanship of Dr Odd Rogne of Norway[297] (Royal Swedish Academy of Sciences 1988). The meeting also agreed to accept submissions from Nordic countries for the placement of a secretariat. Taking advantage of having so many eminent Arctic scientists on hand, the meeting also identified major scientific projects for international coordination and cooperation in Arctic research.

Significantly, the Stockholm meeting accepted an invitation to Leningrad in December 1988 for a 'Conference of Arctic Countries on Coordination of Research in the Arctic' and to work further on the concept of the IASC.

Over 500 scientists and specialists attended the Leningrad meeting, which was conducted 'without prejudices in the spirit of new thinking', reported the General Summary.[298] The Leningrad Conference was attended by representatives from both Arctic and non-Arctic countries which in itself indicated that a rather more expansive perception of the place of the Arctic in the global order was developing.

The conference further developed the ideas from Stockholm, including a provisional research agenda.[299] The conference program was broadened to include discussion on development of the region's resources, '...providing for its balanced economic development and creating a system of international ecological safety' (Anon. Leningrad Document 1988:1). The utility of scientific information to both resource exploitation and geostrategic policy has always been a fundamental concept underpinning discussions of cooperative Arctic science and the Leningrad forum was no exception.

The Leningrad Conference was considered another important step towards improving cooperation and strengthening communication.[300] The Conference, the initiative for which was credited to President Gorbachev, was concluded with the comment that the participants desired on-going, regular meetings, hopefully within the forum of the International Arctic Science Committee (Anon. Leningrad Document 1988:5).

A final preparatory meeting was held in Helsinki in May 1989 and the Founding Articles for the International Arctic Science Committee were endorsed by representatives of the domestic scientific organizations of the Arctic 8 in Resolute Bay, Canada in August 1990 (IASC 1990:2).

4.4.3 The Organizational Structure and Political Consequences of IASC

According to the Founding Articles, the General Principles of IASC are represented as follows:

1 IASC is a non-governmental scientific organisation established to encourage and facilitate international consultation and cooperation for scientific research concerned with the Arctic.

2 IASC, in carrying out its activities, will strive for the highest standards of excellence and be guided by the principle of scientific openness.

3 IASC endeavours to cover all subjects and fields of science for the advancement of world science and for the benefit of the Arctic regions.

4 IASC will take into account programmes and activities on Arctic research advanced by other scientific organisations and will cooperate with them whenever appropriate.

5 IASC will not interfere with the scientific activities of any country or group of countries carrying out research in the Arctic, nor commit governments to support or approve programmes or activities.

6 The activities of IASC should be consistent with the regional interests of the Arctic countries.

7 The activities of IASC will in no way affect the rights or obligations of countries under international law with respect to scientific research in areas within their jurisdiction.

(IASC 1990:4)

Principles 5 and 6 were obvious attempts to depoliticise Arctic science. Bureaucrats dealing with political and policy questions most probably needed the kind of reassurance captured in the phrasing of these two Principles, reaffirming that IASC was not about to put pressure on governments to cooperate. What governments needed was motivation, not coercion (Rogne pers.comm).

The similarities between IASC and SCAR - its southern polar counterpart - are obvious.[301] IASC anticipates interaction with SCAR at working group level, with informal talks and a formal exchange of letters having taken place to this end. However at this stage it is not envisaged that IASC and SCAR will merge, there being no mutual benefit in doing so.[302] Bringing into IASC the very best of SCAR and leaving behind the worst should, in theory, make IASC a better organization.[303]

IASC is composed of a Council, a Regional Board and various working groups.

- **IASC Council**

The Council is the primary functional organ of IASC. Its stated responsibilities, *inter alia*, are as follows:

1 to develop policies and guidelines for cooperative scientific research concerned with the Arctic;

2 to establish working groups, as needed, and determine the terms of reference for and participation in such groups;

3 to endorse plans developed by working groups and recommend scientific programmes and projects;

4 to recommend, in cooperation with the appropriate working groups, implementation plans for IASC programmes and activities;

5 to develop plans and facilitate the coordination of logistics and operations for IASC programmes, projects and activities;

6 to decide on the participation of representatives of national scientific organisations from the non-Arctic countries; and

7 to organise Arctic Science Conferences.

Participation in IASC is open to representatives of the scientific organisations of the Arctic 8, along with '...representatives of the scientific organisations of any other countries, during such time as those countries are engaged in *significant Arctic research*'.[304] In recognition of the problems encountered by the Antarctic Treaty System by the *effect*, more so than the actual wording, of its Treaty Article IX.2 regarding 'substantial scientific research activity' in the Antarctic as a basis for achieving Consultative Party status, this IASC caveat was redefined at the 1992 Meeting. *Significant Arctic research* now means '...systematic and organized enquiry or knowledge in any field or subject...' pertaining to the Arctic[305] and including traditional knowledge, but specifically '...in at least two major fields of enquiry, with published results in the international refereed science literature over a period of at least five years.'[306] There is no legal imperative on member states and all decisions relating to the nature of scientific enquiry are made by member governments. This situation naturally softens the effect of IASC in law.

The former USSR objected to the inclusion of non-Arctic states on the Council and wanted only the Arctic 8, although it did concede the appropriateness of the presence of other countries' representatives on working groups. The problem was essentially a conflict between interests of strategic, environmental and economic import. Prominent non-Arctic States which were observers only at the Resolute Bay meeting in 1990 were the UK, France, Germany, Japan and Poland. They applied for membership at the second IASC meeting in Oslo in January 1991 and along with the Netherlands, their membership was accepted at this meeting. The USSR eventually relented and allowed these states - while they held *significant Arctic research interests* - to participate fully in decision-making on the Council. This situation, however, would be open to review every few years (Archer undated).

The decisions of the Council are based on consensus.

- **IASC Regional Board**

The Regional Board is the quasi-political or controlling organ of IASC and is composed of representatives from the Arctic 8 only. Its general mandate is to consider Arctic *interests* and to ensure that the activities of IASC are consistent with those interests (IASC 1990:6, emphasis added). The nature of these interests is unspecified.

The Regional Board is the result of a compromise made during the establishment of IASC, when dealing with such politically sensitive dichotomies as international or global science and regional or domestic science, became difficult. The Cold War was still foremost in the minds of many of the participants as they sat across the table from

each other and the Regional Board was formed as the medium through which balance and perspective would be retained in favour of the Arctic over non-Arctic states (Rogne pers.comm).

The IASC Council is expected to take the Regional Board's recommendations into account. The Board's decisions are also consensual.

- **IASC Working Groups**

In the structure of IASC, provision is made for the establishment of working groups to provide the main fora for the development of programs and activities; to exchange information, discuss problems, methods and research directions; and to identify opportunities for cooperation (IASC 1990:7).

Many working groups are already in existence and deal with global change; a vast array of polar scientific disciplines, including the human and social sciences; radioactive waste; and an important new initiative - the International Scientific Initiative in the Russian Arctic, established to facilitate cooperation in that state (IASC 1993).

4.4.4 Measuring the Strength of IASC

When thinking about the legitimacy of IASC, is it appropriate to apply the same parameters indicated in the template (on page 62) regarding who the actors are, are they representative of the rightful stakeholders and so on? One would think not, since IASC is a single-issue organization and hence its legitimacy is inherent in the very fact of its existence. The same might apply to accountability. Who should IASC be accountable to? As an advisory body only, and a forum for the development of scientific intellect, the organization need not be accountable to anyone but its members. However, perhaps it *is* necessary for IASC to account for its progress to each member's individual government which sponsors it financially, and to the Norwegian Government which provides the Secretariat.

What is less problematic to measure in terms of these analytical parameters, is effectiveness. IASC does have a set of clearly defined goals, that is, to '...encourage, facilitate and promote basic and applied interdisciplinary research in or concerned with the Arctic at a circumarctic or international level; and to provide scientific advice on arctic issues.' These can, at some point in the future, be measured against the output of IASC using such variables as changes in scientific program funding, output in peer-reviewed journals and the incorporation of IASC recommendations into government policies and laws.

IASC is immature as an organization and there is much work still to be done, but certainly at this early stage IASC appears to have achieved a measure of credibility in keeping with its pioneering role as an Arctic organization. It will be shown in the following discussion that this quasi-NGO scientific body has been responsible for stimulating a kind of confidence within the Arctic political community, which has enabled policy-makers to devise an environmental protection strategy for the region. IASC has subsequently played a key role in events by acting as auditor for one of the Arctic Environmental Protection Strategy's programs, and this will be discussed later in this work.

This study now turns to the development of the Arctic Environmental Protection Strategy. In order to put the AEPS into context, it is first necessary to give some background information on the state of the Arctic environment.

4.5 Common Environmental Problems in the Arctic

The terms *fragile* and *robust* are often juxtaposed in descriptions of the polar environments. The image of fragility is largely emotive, emanating from the heroic ages of early polar exploration. Descriptions of the *beauty* and *uniqueness* of the regions have been further enhanced in contemporary terms by the development of a common guilt over the partial destruction of some wildlife populations, particularly strongly emotive animals like whales and seals. The image of robustness is a product of a vision of immensity of Antarctica, the vastness of the polar seas, huge icebergs and whales of leviathan proportions, so that the sheer volume of things polar evoke parallel images of sturdiness and strength. These views often overshadow a more pragmatic characteristic of both the Antarctic and the Arctic: their *vulnerability*.

The Arctic environment is vulnerable for several reasons:

- low temperatures retard the breakdown of contaminants;
- short growing seasons, which are a product of cold temperatures, limited sunlight and cold soils, retard regeneration;
- low biological diversity, a short food chain and high stock levels make species vulnerable to pollution catastrophes;
- highly productive marine areas make the seas and rivers vulnerable to contamination; and

- climatic conditions favour the deposition or concentration of airborne contaminants in certain Arctic areas.

(Osherenko & Young 1989:111- 16)

In general terms the same is true of the Antarctic. In addition to these general characteristics, polar ecosystems are enigmatic in the sense that little is known about the true extent of interaction between some components. Polar ecosystems are dynamic (blooms and cycles); diverse and yet specialized (eg. localisation of productivity) and at times some species exist at the very limits of survival. Conditions are harsh when compared to temperate climates and many organisms may have evolved or made anatomical and behavioural changes to polar conditions to maximise species survival.

The assumption is that most species will survive providing their environments remain in the relative *status quo* to which they have become accustomed. If human impact, by way of unregulated fishing or pollution for instance, alters this equilibrium, certain species will no doubt be in peril. The exact point at which disequilibrium triggers irreversible mortality is problematic in most cases, and it is this which resource managers ponder at length.[307]

Because of a lack of decisive scientific evidence, comprehensive ecosystem management is daunting. It is difficult, for instance, to determine the target level of recovery for an *unbalanced* ecosystem when too little is known about optimum population levels. The data set is too short (only about 50 years or so) to make qualitative and quantitative judgements. Therefore proactive management objectives may remain elusive until more conclusive information on the optimum equilibrium of these dynamic polar ecosystems is available. However, this does not, and should not, preclude precautionary approaches to eco-management.

Arctic conservation was being addressed as early as the 1950s. In the US, careful administration of wildlife was advocated for land use management in the Arctic region; the Soviets were gathering data on the protection of mammals and birds; Denmark was considering a protected area system for parts of Greenland; and the IUCN established a standing committee to investigate problems of protecting Arctic fauna (Boardman 1981:129-30). IUCN's Arctic Fauna Committee and its foundation work were largely responsible for the impetus towards protection of polar bears (Boardman 1981:130).

However, many of the global environmental organizations, and indeed many regional ones as well, were located well south of the Arctic on the periphery of the problem –

not unlike the Governments which formulated Arctic policy (Osherenko & Young 1989:119). Accordingly, they were, and probably still are, sometimes perceived by northern indigenous populations as '...another intrusive influence from the South' (Osherenko & Young 1989:119). Along with the IUCN, the World Wide Fund for Nature (WWF) is another international environmental organization which has historically taken an active interest in Arctic eco-management. Northern populations have their own lobby groups, chief among them the ICC and the Makivik Corporation of northern Quebec.

As discussed in Chapter 1 in relation to global environmental ethics, in the Arctic too there is sometimes little common ground between all of the stakeholders because of cross-cultural and political cleavages and differences in core ecological values. The concept of wilderness is a case in point. As an essentially Western, patriarchal, urban construct, the concept of wilderness is totally irrelevant to many indigenous groups.[308] This kind of dichotomy is not unique to the Arctic; it is the same the world over.

With this in mind, the identification of ecosystem threats or harm in the Arctic has been a product of the progressive realization of both the region's inherent importance to global processes and its vulnerability to human impacts. The polar regions are zones of net radiation deficit and serve as major heat sinks. These heat sinks drive the primary circulation patterns in the atmosphere and oceans. It is known that polar regions have played a key role in climate changes in the past and it is also known that climate and ocean circulation patterns can shift very quickly. This may be directly and indirectly related to environmental changes in both polar and subpolar regions (Mayewski in AMAP 1993a:46).

Perhaps the single most important factor which causes or threatens to cause harm to habitats is human impact through resource exploitation. Both onshore and offshore hydrocarbon extraction and its attendant activities like transport, noise and discarded equipment all contribute to actual or potential habitat disturbances. Minerals extraction and processing is particularly destructive as it involves the establishment of infrastructure like roads, mines and plants which cause long-term alteration to the immediate surroundings. The use of water for power generation is, likewise, an artificial alteration to the natural environment, changing the flow-rates and direction of watercourses and sometimes involving the relocation of indigenous groups.[309]

Transportation of any sort also has the potential to be a major source of habitat disturbance. The Trans-Alaska Pipeline System is one contentious issue which has received enormous public attention, despite its innovative technological safeguards

against spills and the melting of the permafrost which it overlays (Osherenko & Young 1989:132). Similarly the Arctic Pilot Project of Petro-Canada discussed in Chapter 2 was shelved despite its stringent transport safeguards, most probably because of the risk of accidents which nobody has yet determined how to regulate against.

Furthermore, wildlife protection is always a contentious issue, more so when subsistence harvesting by indigenous people is involved. Much Arctic wildlife is a commons or shared resource and nowhere is the *tragedy of the commons* more poignant than in the Arctic.[310] Commons resources are particularly difficult to manage, as fisheries regimes the world over have discovered. Commons resources harvested by indigenous groups, but revered by preservationists, presents a double jeopardy for resource managers. While some issues, particularly whaling and sealing, seem irreconcilable, others have attracted an extraordinary degree of consensus and commitment. The 1973 Polar Bear Convention is a case in point.

4.5.1 The Polar Bear Convention

Like the panda and the whale, the polar bear became an easily-identifiable icon to the international community of conservation-minded people. If the bears had been less-enchanting, they most probably would not have attracted anywhere near the attention they did; it was essentially their value as an economic resource for zoos rather than as a resource for traditional peoples *per se*, which brought their plight out into the open.

In 1956 the Soviets decreed the polar bear to be wholly protected (Boardman 1981:131). By 1965, the bear was an international symbol of conservation groups. The bears were known to range across Canada, Greenland, Spitzbergen, Russia and Alaska. As with all new environmental initiatives, a lack of scientific knowledge hampered the progress of individual state groups working towards a solution to the problem of protecting the species. Eventually, a five year moratorium on hunting was put in place in 1970, during which time an updated convention, modelled on an earlier Soviet draft protocol, was circulated by IUCN. IUCN was instrumental in having this version finally agreed to in 1973.

The Agreement on Conservation of Polar Bears[311] contains general provisions prohibiting the taking of polar bears (Article I) except for *bona fide* scientific or conservation purposes, or by traditional hunters using traditional methods as permitted under state laws (Article III). Importantly, each signatory is mandated to take action to preserve the ecosystems to which their polar bear populations belong (Article II). In addition, signatories are to investigate species management and conservation and to coordinate and exchange information to this end (Article VII).

As a regime to manage polar bears, this Agreement gained legitimacy by making a direct connection (although an indirect reference) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), signed earlier that same year. Article V of the Agreement prohibits the import, export or traffic in bears, their parts or products taken in violation of the Agreement, and Article III.2 prohibits commercial trading in any bear or part thereof taken legally.

Despite the myriad of domestic regulations pertaining to environmental management, the Polar Bear Convention remains the only pan-Arctic resource management agreement in effect today.

4.5.2 The Big Picture: the Arctic Environment and Global Implications

A number of factors have combined to highlight the problem of Arctic environmental pollution - actual or potential. The identification of the depletion of Antarctic stratospheric ozone was one incident which piqued the curiosity of northern scientists. When the scientific community looked at the Arctic they found a similar trend of ozone reduction, although not as severe as in the Antarctic (AMAP 1990:4). It became obvious that the effects of ozone-destroying chemicals could only be expected to continue in the high northern latitudes while those contaminants were being released into the atmosphere. Attendant to this was the world-wide scientific concern about global climate change. Together ozone depletion and global warming were considered the two most significant threats to the Arctic environment (AMAP 1990:4).

Based on information from existing scientific research and anecdotal evidence, a picture of the status of the Arctic environment was constructed. Although generic in nature, statements like this about the Arctic environment paint a grim picture.

> The Arctic is one of the last areas of relatively pristine nature to remain on earth. However, pollution is becoming more apparent in this region. Measurements indicate that pollutants, such as persistent organics, heavy metals, acidifying gases, and radionuclides, originating from anthropogenic activities at mid-latitudes are transported to the Arctic by the atmosphere, rivers and ocean currents. The persistent organics accumulate in the Arctic food web, eg. pesticides such as DDT and lindane, and PCB-oils used in hydraulic systems and electrical transformers. Relatively high values of these pollutants have been detected in fish, birds, marine and terrestrial mammals and humans. Emissions of heavy metals and acidifying gases (SO_2 and NOx) south of the Arctic have been shown to have negative effects on the Arctic environment. However, emissions and discharges within the Arctic also contribute to negative impacts on vegetation and wildlife. The Arctic area has received radionuclides through the fallout from nuclear weapons testing, reprocessing plants

> and nuclear accidents. In addition, radioactive wastes are stored on land or have been dumped into Arctic Seas.

(AMAP 1993a)

This scenario was described several years after the establishment of IASC but the pre-existing legal and institutional framework of the Arctic had no coordinated mechanism for dealing with such threatening transboundary environmental issues as these. What the scientific community did, via IASC, was to concede the limits of their knowledge and to stress the absolute imperative of becoming much more informed very quickly so that they could provide a legitimate forum for disseminating information to the policy makers. The formation of a dedicated, coordinating scientific organization was thus both justified and timely.

4.6 A New Era of Optimism

With the establishment of IASC, regional cooperation had turned full circle from the heady times of Weyprecht's First International Polar Year, through the political paranoia of the Cold War, to the *glasnost* and *perestroika* of a new-look Soviet Union.[312]

The Finnish Government was known to be extremely anxious about the presence of the 'big bear' Russians next door, particularly in connection with the extent of transboundary pollution originating from the industrial centres on the nearby Kola Peninsula. Finnish concerns that their environment needed urgent attention no doubt assisted in the creation of the historic multilateral declaration: the Arctic Environmental Protection Strategy.

The process from which this declaration emanated became known as the Rovaniemi Initiative.[313] It began with tentative discussions between the Finns and other Nordic and Arctic states in the Spring and Summer of 1987. It was reported then, however, that: '...the strategic situation at the time was not favourable for the launch of a formal Finnish invitation to the other governments of the Arctic 8 to consider cooperation on Arctic environmental protection.'[314] One catalyst which altered this unfavourable strategic situation was the sentiments expressed by Soviet President Gorbachev in Murmansk in 1987.

4.6.1 The Gorbachev Factor

President Gorbachev's message conveyed new optimism in the direction of not only East-West relations but also pan-Arctic cooperation.[315] It is worthwhile pausing to consider his words, as this speech on the 70th anniversary of the Socialist Revolution has been proclaimed by many Arctic commentators as an incisive turning-point in circumpolar relations.[316]

In an emotional tirade, Gorbachev informed the people of Murmansk about what restructuring meant: 'We are learning great lessons from life...truthfulness and openness...responsibility and discipline...wider democracy...internationalism and patriotism.'[317] He also expressed profound dissatisfaction with the psychological stagnation of the Soviet people (p.59).[318] While admitting that the road ahead had been fully opened, though it would not be without its problems, he decried the squandering of resources and the inability to utilise their economic potential, citing many instances of mismanagement by the State as examples (pp.49-53). He appealed to the Soviet people to become more thrifty and cost-conscious, to be more democratic and to persist in sharing the Government's vision for the eventual success of the planned economic and social restructuring.

Having put the domestic position into perspective, Gorbachev then castigated the anti-Soviet confrontational bent evident in the words of top Western leaders. 'It confirms', he said, 'that we are dealing with yesterday's rhetoric, while real-life processes have been set into motion' (p.64). That some in the West did not appear to take restructuring seriously did not derail Gorbachev from his mission of selling the new-look Soviet Union not only to his own people, but around the international conference table as well.

Importantly in the context of this study, his speech indicated a willingness on the part of the Soviet Union to radically reform its foreign policy, to accord with '...a new democratic philosophy of international relations...'. 'The new mode of thinking with its humane, universal criteria and values is penetrating diverse strata. Its strength lies in the fact that it accords with people's common sense' (p.64).

With sentiments such as these at their disposal, it is little wonder the Finns then felt the time was right to resume contact with the other Arctic nations and to discuss important environmental questions which had been pending for some time.

As Gorbachev mentioned in 1987 and the Finnish Working Paper for the first Rovaniemi meeting (dated 16.1.89) reiterated, the 1980s was a decade during which the adverse effects of human impact increased, exposing the Arctic to hitherto unknown dangers. In recognizing the fragility and vulnerability of the Arctic ecosystems, the three most important environmental threats were identified as climate change, marine pollution and resource exploitation. The attitude of the Soviet Union towards its Arctic neighbours was seen as crucial in addressing these threats. The willingness on the part of the Soviet Union to negotiate partial disarmament (pp.65-70) and nuclear test bans (pp.65-6) was good news for the Nordic countries, which were particularly susceptible, by virtue of their proximity, to nuclear fall-out and the consequences of a nuclear war. Gorbachev's message went so far as to suggest an Arctic 'zone of peace' (p.70), incorporating a nuclear-free Northern Europe and restricted naval activities. Joint resource development and the opening up of the previously restricted Northern Sea Route (pp.70-3) were welcomed as being of both strategic and economic utility. Importantly, Gorbachev recognised the immense significance of scientific exploration for the whole of mankind, and offered to share Soviet experience in exchange for cooperation with other countries (pp.70-3). This proved to be a major impetus towards the establishment of IASC, as discussed above.

The consequences for the indigenous nations – their well-being, their traditions and cultures – were also of concern, though Gorbachev made no specific mention of how the 'development of ties between northern peoples' would be achieved, nor what role they would, or indeed should, play in his new, open kind of diplomacy (p.73).

With regard to the environment, Gorbachev made mention of the UNEP Regional Seas convention for the Baltic[319] as an example of an existing measure which should be expanded (p.73). Without being more explicit, he also proposed '...drawing up jointly an integrated, comprehensive plan for protecting the natural environment of the North' (p.73).

In short, Gorbachev's Murmansk speech represented the Soviet Union's 'profound and certain' desire to see the Arctic as a 'genuine zone of peace and fruitful cooperation' (p.74). Whether this was to be accomplished by separating military from non-military issues, or by giving greater emphasis to the non-military within the broader military agenda, is still the subject of speculation.[320]

The passage towards circumpolar ecosystem responsibility, stimulated by Gorbachev's words and subsequently proposed by the Finns, was to be multi-faceted:

governmental and scientific cooperation to overcome the lack of cohesive and comprehensive regulation of human activity.

4.6.2 Further Confidence-Building

In the context of Gorbachev's speech and the Finnish concerns, those Arctic countries with bi-polar programs were also mindful of events occurring in the Antarctic at the time. Specifically, the Antarctic Treaty states had come to agreement on a regime for the regulation of mineral resource activities. This represented the operationalizing of their perception of sustainable development of non-living resources (as discussed in Chapter 5). What the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) provided was a program of planned and permitted development which took into account the vulnerability of aspects of the Antarctic environment. As noted earlier, before any permits could be issued for proposed activities like exploration or development, a liability annex to the Convention was required to be formalized. In this way the Antarctic Treaty states had attempted to strike a balance between issues of environmental and developmental concern. The fact that sovereignty problems contributed to the failure of CRAMRA has been already discussed. However, in the context of the Arctic, sovereignty was not in doubt *per se* and would not have figured prominently in any CRAMRA-like agreement for the north.

Some northern commentators considered that the quality of environmental protection offered by CRAMRA was only sectoral (that is, relevant only to areas of proposed resource activity), a failing which was seen as leading to the push for a more comprehensive and wide-ranging environmental agreement (Bjørklund 1993:5). Therefore the failings of CRAMRA, and the later establishment of the comprehensive Madrid Protocol on environmental protection, may have served as stimuli to the bi-polar Arctic states as they embarked on their journey towards multilateral ecosystem management.

From a position of intransigence in the mid-1980s, the former Soviet Union's new openness represented a quite remarkable leap forward for prospective cooperative inter-state relationships.[321] However, the establishment of IASC over a period of years and a series of meetings, both formal and informal, also highlighted the expansive time frame and political climate in which the development of confidence-building measures was placed. Notwithstanding, each meeting, each new statement of affirmation by one country or another, served to build upon the tentative framework already laid down. This is not to suggest that the steps taken were always in a

forward direction, as political change was occurring at the same time which was not without a certain amount of confusion and chaos.

Given all of the evidence presented above, the period during which IASC came into being heralded a new era of optimism in the Arctic which was to permeate eventually through to the substantive issue of ecosystem management.

4.7 The Rovaniemi Initiative

The amicable trend towards cooperative discourse and increased confidence brought about by the establishment of IASC and Soviet *glasnost*, made the seeking of further cooperation in the field of environmental matters more of a probability for the Arctic states.

Although IASC was issue-specific, that is, scientific, its establishment set a precedent as a contemporary model of Arctic cooperation, particularly since all of IASC's attendant problems and conflicts were known variables to all of the actors concerned. However, a broadening of the Arctic cooperative agenda to include the politically charged issue of ecosystem management still presented many problems in terms of the constraints of sovereignty.

The process of addressing the common problem of Arctic eco-management had already begun with bilateral accords between the Soviets and their near neighbours Finland, Sweden and Norway in 1988 and 1989. Furthermore, most of the Arctic states were also party to many of the global environmental instruments in force or agreed upon at the time (see Appendix 5), as well as being involved with IASC.

The first Arctic-specific environmental conference was held in September 1989 in Rovaniemi, Finland, following the circulation of a Finnish working paper. This consultative meeting was held at Ministerial level and was attended by representatives from Finland, USSR, Denmark (representing Greenland), Norway, Canada and Sweden. It is understood that Iceland and the US were invited but did not attend (Archer undated:12).

The meeting resolved to establish two standing committees: a working group on the environment and another on legal materials. However, military operations and pollution therefrom were excluded from explicit investigation, probably in order to facilitate cooperation and agreement while minimising conflict (Archer undated:12).

The next round was held in April 1990 in Yellowknife, Canada. This further preparatory meeting was attended by all of the Arctic 8, plus observers from the Federal Republic of Germany, the United Kingdom and the Inuit Circumpolar Conference. Vital motivating support for the process was received from all delegations, and several fundamental themes in their presentations to the meeting are noteworthy:

- research and monitoring are fundamental to understanding environmental problems in order that appropriate solutions be found;
- unilateral, bilateral and multilateral actions will all be required to resolve Arctic environmental problems;
- a program of international ecological cooperation should be established for the Arctic region;
- an Arctic Sustainable Development Strategy would be a clear expression of commitment;
- existing legal instruments may be the basis for improved Arctic environmental protection through a strengthening and broader application.

(AEPS 1990:2-3)

In Yellowknife, the working groups established at Rovaniemi reported on their progress to date. Comprehensive reports were still in their formative stages but a clearer picture was emerging, which indicated that a great deal more information and monitoring were required before any substantial policy statements could be made.

The report of the legal materials group highlighted the limitations of existing law, both regional and global, in environmental protection of the Arctic. The report concluded that each type of ecosystem damage required a unique legal response and while some laws were adequate, others were not. In any event, states were urged to accede to any international agreements with relevance to Arctic ecosystem protection.

Both working groups were consequently mandated to continue their investigations. In addition, Canada submitted a draft Memorandum of Understanding on the Conservation of Arctic Flora and Fauna (CAFF) which was welcomed and discussed by the Meeting. Canada agreed to review the document (YK/Doc.22) for the next meeting.

Another draft document prepared by Sweden related to protection of the marine environment. Sweden's input was welcomed and further work plans were to be made towards presenting a new proposal once states had studied the draft.

An *ad hoc* group was formed at Yellowknife to draft an Arctic environmental protection strategy and to formulate a position on emergency prevention, preparedness and response. Specific principles to be included were: 'sustainable/equitable development' and 'stewardship by Arctic countries and Arctic peoples' (Archer undated:13).

At the diplomatic level at least, the ice states appeared to be on a path towards articulating explicit and definitive goals, along with strategies for achieving those goals. The regime-building process was in motion. However, a new problem had emerged. The Yellowknife forum was thought to be protectionist and there was an undercurrent of feeling against non-Arctic state participation. However, the meeting was shown that there were some very good reasons why non-Arctic states should participate in the Rovaniemi process:

- the solutions to transboundary pollution required the involvement of industrialised nations (especially if they were the source);
- migratory fauna were a shared resource (especially straddling fish stocks); and
- the science programmes of some non-Arctic states, especially the UK, Germany and Poland, made a valuable contribution to the pool of Arctic scientific knowledge, especially since these states were members of IASC.

In fact, as evidence of the legitimacy of non-Arctic state participation in the process, the Inuit Circumpolar Conference, the UN Environment Programme and the UN Economic Commission for Europe were all invited as observers, along with Germany, Poland and the UK, after the inaugural 1989 meeting in Rovaniemi.

Norway also presented a draft discussion paper at Yellowknife, proposing the formalization of Arctic monitoring. This subsequently led to a meeting of experts in Oslo in November 1990. With the next ministerial meeting of the Rovaniemi round set for June 1991 in its sights, the Oslo meeting produced a proposal for an Arctic Monitoring and Assessment Program (AMAP) and sought input from all Arctic states. It was anticipated that an AMAP would provide information, back-up and coordination through the preparation of reports on the state of the environment; the development and approval of a protocol and coverage assessment; the determination of monitoring requirements; and the provision of advice on research and other resources necessary to undertake identified investigations (AMAP 1990:2).

The next Rovaniemi Official's Meeting was held at Kiruna, Sweden in January 1991. This forum proved again just how tenuous the relationship was between Arctic and non-Arctic States and hence both the fragility of the process itself and the minimalist

perceptions of some states. It was Poland's first official attendance and their aggressive attitude was reported to have very nearly jeopardized the ground both the UK and Germany had gained in being accepted as external interested parties to the Arctic-specific initiative (Archer undated:15-16). The Polish delegation at Kiruna was heavy-handed in their approach, demanding full membership of the Rovaniemi Process on the grounds of concerns about transboundary environmental effects. This was said to be counter-productive to the soft approach to non-Arctic state participation favoured by the English and German delegations (Archer undated:15). Notwithstanding, the process continued its momentum and in June 1991 the Ministers again assembled in Rovaniemi, Finland.

This time the list of observers had grown to include two more indigenous peoples' groups - the Nordic Sámi Council and the Association of Small Peoples of the North. Together with the Inuit Circumpolar Conference, these groups provided circumarctic representation of native interests, thereby extending the legitimacy of the process, symbolically at least.

The President of the newly-established IASC, Dr E Fred Roots, also attended and presented an overview of IASC to the meeting (IASC 1992:3). The Federal Republic of Germany, the UK and Poland were also in attendance as observers, obviously having reconciled their differences since Kiruna.

From the first Finnish initiative of September 1989, in the space of less than two years the ice states had built an impressive foundation of confidence for cooperative problem-solving in the field of the environment. This was rounded off with a Declaration on the Protection of the Arctic Environment and the release of the Arctic Environmental Protection Strategy at the gathering in Rovaniemi in 1991.

4.8 Towards An Arctic Eco-Management Regime: The Arctic Environmental Protection Strategy

The Arctic Environmental Protection Strategy[322] and the Declaration on the Protection of the Arctic Environment are both soft law instruments. The participants who signed the Declaration were all Ministers or Deputy Ministers and one was an Ambassador. (The participation of the observers was not acknowledged in the Declaration.) Both documents can be considered statements of Government opinion and intent, but neither can be considered binding legal instruments.

The Declaration read, in part:

> We, the Representatives of the Governments of Canada, Denmark, Finland, Iceland, Norway, Sweden, the Union of Soviet Socialist Republics and the United States of America;
>
> Meeting at Rovaniemi, Finland for the First Ministerial Conference on the Protection of the Arctic Environment;
> Deeply concerned with threats to the Arctic environment and the impact of pollution on fragile Arctic ecosystems;
>
> Acknowledging the growing national and international appreciation of the importance of Arctic ecosystems and an increasing knowledge of global pollution and resulting environmental threats;
>
> Resolving to pursue together in other international environmental fora those issues affecting the Arctic environment which require broad international cooperation;
>
> Emphasizing our responsibility to protect and preserve the Arctic environment and recognizing the special relationship of the indigenous peoples and local populations to the Arctic and their unique contribution to the protection of the Arctic Environment;
>
> Hereby adopt the Arctic Environmental Protection Strategy and commit ourselves to take steps towards its implementation and consider its further elaboration.

(AEPS 1991b:1)

The background work so far in this study has indicated the pervasive nature of the global environmental movement and the role of scientific investigation in informing the international community about ecosystem threats. Acknowledgment is also made in this Declaration of these bases for seeking a regime to manage the Arctic ecosystem.

The Declaration thereafter became more demonstrative:

> We commit ourselves to a joint Action Plan of the Arctic Environmental Protection Strategy which includes:
>
> - Cooperation in scientific research to specify sources, pathways, sinks and effects of pollution, in particular, oil, acidification, persistent organic contaminants, radioactivity, noise and heavy metals as well as sharing of these data;
>
> - Assessment of potential environmental impacts of development activities;
>
> - Full implementation and consideration of further measures to control pollutants and reduce their adverse effects to the Arctic environment.
>
> We intend to assess on a continuing basis the threats to the Arctic environment through the preparation and updating of reports on the state of the Arctic environment, in order to propose further cooperative action.

> We also commit ourselves to implement the following measures of the Strategy:
>
> - Arctic Monitoring and Assessment Programme (AMAP) to monitor the levels of, and assess the effects of, anthropogenic pollutants in all components of the Arctic environment. To this end, an Arctic Monitoring and Assessment Task Force will be established. Norway will provide for an AMAP secretariat.
>
> - Protection of the Marine Environment in the Arctic, to take preventative and other measures directly or through competent international organizations regarding marine pollution in the Arctic irrespective of origin;
>
> - Emergency Prevention, Preparedness and Response in the Arctic, to provide a framework for future cooperation in responding to the threat of environmental emergencies;
>
> - Conservation of Arctic Flora and Fauna, to facilitate the exchange of information and coordination of research on species and habitats of flora and fauna.

(AEPS 1991b:2-3)

Further actions were also declared:

> We agree to hold regular meetings to assess the progress made and to coordinate actions which will implement and further develop the Arctic Environmental Protection Strategy.
>
> We agree to continue to promote cooperation with the Arctic indigenous peoples and to invite their organizations to future meetings as observers.

(AEPS 1991b:3)

The representatives agreed to meet in Nuuk, Greenland in 1993. The declaration then concluded with:

> ...we, the undersigned Representatives of our respective Governments, recognizing its *political* significance and environmental importance, and intending to promote its results, have signed this Declaration.

(AEPS 1991b:3, emphasis added)

It is interesting to note the political significance the parties attached to these statements. In light of this, the Declaration may be seen as an historic manifesto of the collective intent of the Arctic states to continue to pursue a cooperative arrangement for eco-management. The Arctic Environmental Protection Strategy, moreover, takes this positive affirmation many steps further by clearly articulating objectives, principles and proposed courses of action.

Before analysing the content of AEPS, it is useful to discuss the expanded information data base on Arctic ecosystems. This brief review will give the Strategy background

meaning. Although better placed earlier in the Chapter, this section is presented here to further reinforce how little information there was regarding Arctic ecosystems, as in fact much of the information below has been gleaned since the establishment of IASC.

4.8.1 Arctic Ecosystems in New Light

In the context of the emerging Arctic regime for ecosystem management, the problems specific to the Arctic ecosystems were agreed upon and defined by the process leading to the Rovaniemi Initiative. They comprise six major components as follows:

- **Persistent Organic Compounds**

This category of pollutants include PCBs, DDT, hexachlorocyclohexane (HCH), chlordane and toxaphene. They are particularly hazardous because of their high stability and persistence in the environment, potential for bioaccumulation and high chronic toxicity. Although the production of many of these compounds has been stopped or restricted, their use remains widespread. They have been released in large quantities into the environment and transported from the industrial centres of Asia, Europe and North America via rivers, the atmosphere and ocean currents to the Arctic. There is a direct pathway through the food chain from lipid-rich wildlife like bears, whales and seals to humans because of the tendency of these chlorinated organic compounds to bond with fat cells (AEPS 1991a).

- **Oil Pollution**

As already mentioned, the climatic conditions of the Arctic retard the dispersal of pollutants such as oil, thereby lengthening the period in which a spill could be harmful to wildlife. In addition, oil may become trapped by the ice. The Arctic conditions also inhibit quick and effective response to and clean-up of contaminated areas (AEPS 1991a).

- **Heavy Metals and Other Destructive Elements**

The long-range atmospheric transportation of heavy metals adds to the accumulation of many naturally occurring compounds and winds carry carbon dioxide, sulphurs, CFCs and pesticides from mid-latitudes into the Arctic. The likely contribution of increased carbon dioxide to ozone depletion has now been verified (Osherenko & Young 1989:122-3). Heavy metal contamination has been found throughout the Arctic ecosystem in the air, rain, ocean, soil, rivers, lakes and biota. In addition, local resource activity discharges pollutants. One of the main concerns is the transportation of such compounds through the food chain to humans (AEPS 1991a).

- **Noise**

Noise pollution may be particularly disturbing to marine mammals because of the importance of *natural* sounds to their echolocation. Fish stocks may also be affected. Similarly, low level overflights of terrestrial fauna and seals on ice may cause short term disturbance to the populations (AEPS 1991a).

- **Radioactivity**

A major source of worry is nuclear fallout, and concerns have deepened since the Chernobyl nuclear power plant accident in April 1986. With primary effects felt in Sweden, the Sámi reindeer herds were pronounced unfit for human consumption after radioactive iodine and caesium fell on their prime feeding lands (Osherenko & Young 1989:127). This led directly and indirectly to the disturbance of habitats. Because reindeer and other game like elk could not be safely taken for the purposes of human consumption, there were fears about overgrazing due to increased stock numbers.

The ecological effects of Arctic militarisation are something of an unknown variable simply because of the secrecy surrounding such activities. It is expected that more will become known with the passage of time. However, radioactive waste dumping by the Russians in the Barents and Kara Seas has been investigated and reported on by a number of sources.[323] One British Government report's conclusion is noteworthy:

> By the conservative methods of risk estimation applicable to pollution issues such as these, there is a threat, albeit a minimal one in comparative terms, from the existing source term of anthropogenic radionuclide introduced into the Northern Seas. This is, however, not the worst problem, which is the enormous volume of waste to be disposed of as the Russian Northern Fleet decommissions a large number of nuclear submarines in the foreseeable future.

(Ash 1994:47)

The report noted that Russia was dealing with this situation, but that Western countries should '...demonstrate by example the standards appropriate to collective ecological security.' This could be achieved by agreeing to collaborate in the salvage of the largest portion of waste, a scuttled submarine and other reactors with nuclear fuel still on board (Ash 1994:47). Furthermore, the report's conclusion contained the warning that:

> Failure to make such a demonstration of intent could easily be interpreted as indifference, or worse, as a tacit acknowledgment that the materials disposed of so far have resulted in minimal injury and that further sea disposal would be both cheap and without political disadvantage.

(Ash 1994:47)

Along with the dumping of radioactive waste and the Chernobyl nuclear plant accident mentioned above, the fallout from atmospheric nuclear weapons testing is a major concern to Arctic nations. The long-lived radionuclides Strontium-90 and Caesium-137 are efficiently retained by surface vegetation and are biologically recycled within the ecosystem. The link through the food chain to humans has been established, as humans consume caribou and reindeer which graze on this contaminated surface vegetation (AEPS 1991a).

- **Acidification**

The sulphur and nitrogen compounds are the two most significant acidifying substances and have been discussed in Chapter 1. The air quality of the Arctic, particularly in winter, is severely affected by motor vehicle emissions, industrial activities and the coal- and oil-based power generating plants. These emissions are from both local and trans-frontier sources. Acid pollutant aerosols contribute to the Arctic haze phenomena made famous by misty Fairbanks' skies. Further, a continuous excessive acid load leads to the mobilization of aluminium and heavy metals in the soil (AEPS 1991a).

The Arctic countries are in agreement about the fact that problems exist but are cautious about the exact nature of such factors as critical loads, the rates of acidification and accumulation. Little is known about the potential effects of chlorinated organic contaminants on the ecosystem, for instance. The available information on ambient oil pollution in the Arctic is also scarce. The regime-builders are similarly unsure about the nature of noise disturbance. In short, while the problems are sometimes visibly obvious, the Arctic states admit that more monitoring and research is warranted (AEPS 1991a).

4.8.2 Dedicated Regime Formation and its Legitimacy

There was no Arctic regime in existence which was capable of dealing with these pan-Arctic ecosystem threats or, prior to the establishment of IASC, of directing the further research that was indicated in order to buttress well-informed, comprehensive policy decisions. It was demonstrated that the problems *were* pan-Arctic in nature and that no single nation could solve them alone.

The fragmented, *ad hoc* legal arrangements were adequate in some areas, but there was no cohesive policy to support full-scale comprehensive Arctic eco-management. The issue of persistent organic contaminants, for instance, is essentially an out-of-area problem, further complicating the process by requiring cooperation with non-Arctic nations (AEPS 1991a:18). Oil pollution was covered by no less than eight separate

international legal instruments, but the area of application of many of these arrangements did not extend adequately to the Arctic, nor did they accommodate its particularly difficult climatic conditions. In recommending strict standards for Arctic oil transportation, the AEPS endorsed liaison with the International Maritime Organization (IMO) (AEPS 1991a:19). Heavy metals contamination was, to some extent, covered under the LRTAP Convention, which limited harmful atmospheric emissions, the Vienna Convention and Montreal Protocol. The marine environment was protected to some degree by both the Oslo and Paris Conventions. The LOSC too has provisions for protecting the marine environment (AEPS 1991a:20-1). There were, however, no noise pollution regulations in force in the Arctic. The International Atomic Energy Agency (IAEA) and various bilateral agreements have the issue of radioactivity in hand, but demonstrate little effectiveness (AEPS 1991a:21-2). Similarly with the issue of acidification, there are regulatory mechanisms to control the sources which affect the Arctic but they were having little apparent effect (AEPS 1991a:22).

In summary, all of the six categories of Arctic ecosystem threats, with the exception of noise pollution, were covered in some way or another by existing legal instruments, but there were critical gaps which allowed the threats to continue. Therefore the Arctic nations considered that cooperative problem-solving was both crucial and urgent.

In this sense, the Rovaniemi Initiative was both timely and essential. The process included all of the actors which were directly or indirectly affected by Arctic ecosystem threats. It accommodated to an unprecedented degree the input of indigenous peoples' groups by acknowledging that '...the cultures and the continued existence of the indigenous peoples have been built on the sound stewardship of nature and its resources' (AEPS 1991a:1-2). It allowed non-Arctic observers into the process, in acknowledgment of the transfrontier nature of some factors effecting the Arctic (AEPS 1991a:2). The benefits of a coordinated regional environmental protection strategy are seen as both regional and global because the Arctic exerts an important influence on the global environment (AEPS 1991a:2).

Furthermore, the AEPS acknowledged the validity and utility of both soft and hard law. It made specific reference to safeguarding the environment for 'future generations' in a manner 'compatible with nature' (AEPS 1991a:2), taking on board the World Commission on Environment and Development's 'international call for action' (AEPS 1991a:1). In addition, it identified existing international, regional and bilateral arrangements pertinent to Arctic eco-management. It also acknowledged the pivotal role of state governments in the process. Importantly, it articulated a philosophy of ecological sustainability: '...this Strategy should

allow for sustainable economic development in the north so that such development does not have unacceptable ecological or cultural impacts' (AEPS 1991a:2).

Each of the points noted above contribute to the legitimacy of the Rovaniemi Initiative and demonstrate the beginning of a commitment towards responsibility for the global ecosystem. There may be no accounting for the many serendipitous moments or the exercise of benevolent coercion to prompt less responsive actors towards accord, however the results are now on the table for the world to witness. The AEPS is not an *Arctic Treaty* and therefore contains no strict legal obligations, *per se*. There is, however, a publicly-declared commitment on the part of the eight ice states: '[This] vulnerability of the Arctic to pollution requires that *action be taken now*, or degradation may become irreversible' (AEPS 1991a:1, emphasis added). Here we also see the beginning of a precautionary approach to ecosystem management.

4.8.3 Conditions of Operation of the AEPS

This emerging Arctic eco-management regime, represented by the Arctic Environmental Protection Strategy, is in its formative stages. Therefore analysis of its operations can only be superficial at this stage.

The procedural and substantive devices it employs are premised on the articulation of three fundamental values: i) protection of the Arctic environment; ii) sustainable and equitable development; and iii) protection of the cultures of indigenous peoples (AEPS 1991a:2). This three-tiered objective will be achieved through 'careful stewardship' by Arctic countries and people (AEPS 1991a:3).

Particular phases can be identified in the conditions of operation of the regime. The broad direction in which the regime intends to move is contained within its Objectives which are as follows:

i) To protect the Arctic ecosystem, including humans.

ii) To provide for the protection, enhancement and restoration of environmental quality and the sustainable utilization of natural resources, including their use by local populations and indigenous peoples in the Arctic.

iii) To recognize and, to the extent possible, seek to accommodate the traditional and cultural needs, values and practices of the indigenous peoples as determined by themselves, related to the protection of the Arctic environment.

iv) To review regularly the state of the Arctic environment.

v) To identify, reduce and, as a final goal, eliminate pollution.

(AEPS 1991a:4)

The first phase is the determination of core values. These are stated to be protection of the ecosystem, sustainable development and protection of indigenous peoples' integrity. Having proclaimed this, the next phase is to review the state of the environment. The third phase is to work on solving any problems identified.

- **Substantive Devices Within the AEPS**

There are no substantive legal arrangements attached to the AEPS. Rather there is a statement of principles to guide the actions of the Arctic states as both individuals and a collective, towards realization of their stated objectives, especially the three core values.

The principles are entreaties to the States to take into account the three core values in management, planning and development activities (Principle (i)). There is a specific ecosystem bent within the directive to base the use and management of natural resources on '...the value and interdependent nature of ecosystem components' (Principle (ii)). While not expressly prohibiting activities which may significantly affect Arctic ecosystems, and while not specifically directing the states to conduct environmental impact assessments, Principle (iii) urges, *inter alia*, that such activities be based on informed assessments of possible and cumulative impacts; that they maintain ecological systems and biodiversity; and that they respect the significance for and influence on global climate. The assumption is that such informed assessments would come from some kind of EIA process, as Principle (iv) specifically asks that 'information and knowledge concerning Arctic ecosystems and resources use will be developed and shared to support planning and should precede, accompany and follow development activities.'

These procedures would necessarily be a state responsibility, initially at least. Similarly the development of a protected area network may also be the responsibility of individual states in the first instance (Principle (viii)). The fundamental value of international and mutual cooperation in fulfilling state and international responsibilities is acknowledged and 'shall be promoted and developed'. The use, transfer and/or trade of the most effective and appropriate technology to protect the environment underscores these cooperative efforts (Principles (ix) and (x)).

- **Procedural Devices Within the AEPS**

In order to achieve these objectives and principles, the Rovaniemi Initiative adopted a structural configuration based on working groups. During the regime formation process, two standing working groups were established to deal with legal and environmental matters (titled the Working Group on the State of the Environment Reports and Monitoring and the Working Group to Review Legal Instruments Concerning the Protection of the Arctic Environment). These groups presented their initial reports to the Yellowknife Preparatory Meeting. An *ad hoc* working group was then convened at Yellowknife to draft both the AEPS and a proposal for emergency prevention, preparedness and response. These working groups continue their projects.

The most significant structural arrangement of the 1991 Rovaniemi Initiative is the establishment of the Arctic Monitoring and Assessment Programme (AMAP) (AEPS 1991a:30-33). This programme is mandated to, *inter alia*, provide up to the minute reports on the status of the Arctic environment. Its preliminary and planned future phases of activity are identified in Figure 4 on the next page.

PHASES	WORK TO BE DONE
Preliminary (1990-1991)	* Design a framework and a plan for the organization and ideal content of AMAP.
	* Prepare an updated list of ongoing monitoring and research activities.
	* Prepare status reports on selected areas of concern, eg. acids, oil, heavy metals, underwater noise and radionuclides for the ministerial meeting in Rovaniemi, June 1991.
Decision at Rovaniemi, June 1991	* Decide whether the AMAP shall be initiated or not, and if initiated –
	* the work schedule for the implementation and the first status report by 1996.
Phase 1 (1991-1994)	* The establishment of an Arctic Monitoring and Assessment Task Force and a permanent secretariat.
	* Establish a number of expert groups to complete the work started in Oslo and assess proposals from the expert meeting.
	* Harmonize existing national, bilateral and international programmes on methodology, stations, sampling frequency, etc.
	* Perform joint monitoring of the parameters identified as our main concern.
	* Perform baseline-studies/research to fill gaps in knowledge.
	* Establish a directory/reference database for an overview of existing programmes and activities, and a system of exchange and presentation of data.
Phase 2 (1991-1994)	* Prepare and present the first holistic status report for the Arctic environment regarding pollution and climate changes.
Phase 3 (1997-)	* Design and perform a revised AMAP based on the experience and results of the first status report.
	* Preparation of status reports at fixed time intervals regarding levels and trends in pollution and climate changes in the Arctic.

Figure 4. Phased Implementation of AMAP and Necessary Tasks
(Source: Reiersen 1991:399)

The Rovaniemi Initiative did not make concrete rules or procedures or legal arrangements binding on the participants. Apart from the establishment of AMAP and the on-going working group projects, the only other procedural device decided upon was to hold regular meetings on the Arctic environment (AEPS 1991a:44).

It was decided that the procedure for meetings, including dates, venues, agendas and participation of observers would be agreed upon at each preceding meeting and communicated to interested parties in advance.

These meetings would have five objectives:

- to identify and coordinate actions to implement and further develop the AEPS;
- to initiate cooperation in new fields relevant to the environmental protection of the Arctic;
- to make necessary recommendations in order to protect the Arctic environment;
- to improve existing environmental regimes relevant to the Arctic; and
- to assess and report on progress on actions agreed upon.

(AEPS 1991a:44-5)

These objectives are very similar to those of the Antarctic Treaty System.

4.8.4 Designated Courses of Action Within the AEPS

The primary course of action indicated by the AEPS was to add information to the inadequate but growing Arctic data base. The phases of the AMAP shown in Figure 4 above were to be one mechanism for achieving this.

Notwithstanding, the process did identify the need to take immediate action regarding marine pollution in the Arctic, irrespective of origin. To this end, the Arctic countries agreed to apply any international environmental law principles contained in treaties to which they were a party, to their Arctic territory.[324] The Arctic states were also encouraged to ratify any instruments which would support the protection of the polar marine environment. Further, they agreed to undertake joint representation and actions in relevant international fora to enhance recognition of the '...particularly sensitive character of ice-covered parts of the Arctic Ocean' (AEPS 1991a:34).

With respect to emergency prevention, preparedness and response, concern was expressed about the increased development and shipping activities within the Arctic, particularly since there was crucial information missing. For example, relative hazards and risks associated with different activities; the geographic distribution of high risk activities; and the mapping of particularly sensitive areas was either undocumented or unfinished (AEPS 1991a:36). Therefore the first designated course of action in this regard was to review existing regional arrangements as a process of evaluating the adequacy of the geographical coverage of the Arctic by these marine arrangements. The states would then convene a meeting of experts to consider response action, coordination and harmonization of policy, early notification systems and risk

assessment. These activities are expected to be coordinated with the activities of AMAP. Anticipated results include the development of contingency plans and training programs; the exchange of scientific, legislative and administrative information; and the establishment of mechanisms for public information and participation (AEPS 1991a:36-8).

The Canadian initiative to implement CAFF, the Conservation of Arctic Flora and Fauna, was a key concern, particularly since '[the flora and fauna] are an essential factor helping to define the culture and survival of the people living there' (AEPS 1991a:39). The problems were considered to be inherently circumarctic and the Polar Bear Convention aside, there was no comprehensive protection of Arctic flora and fauna offered through existing multilateral or bilateral agreements. Accordingly, the states agreed, *inter alia*, to cooperate by exchanging information and expertise, by developing joint ventures, and by designating a national agency to coordinate such actions. The role of IASC and other authorities was also recognised in this regard. The participants agreed to 'establish a mechanism' for furthering CAFF (currently a Working Group), although they did not elaborate at this point (AEPS 1991a:42).

Essentially the onus rests with the Arctic state governments as the activities to achieve CAFF, along with their long-term funding, will be subject to the laws, regulations and abilities of states (AEPS 1991a:43).

4.8.5 Outcomes and Impacts of the AEPS

It is too early to quantify outcomes or impacts of the AEPS. However, some trends have become evident. A Second Ministerial Conference of the Rovaniemi Initiative was held in September 1993 in Nuuk, Greenland. This forum had more observers - Chile, the Netherlands, the Nordic Council and the Northern Forum. It also had a broader perspective, recognising the importance of applying the results of the UNCED (Rio Earth Summit) process, which had occurred in the interim, to the Arctic (AEPS 1993).

The Ministerial Declaration from Nuuk reiterated Rovaniemi's core values, but this time in much more confident and positive language.[325]

The Declaration made reference to the Rio Earth Summit's application to the Arctic region and welcomed the efforts of the Arctic countries to implement, through the AEPS, Rio's relevant provisions. Specifically cited were the Rio Declaration, Agenda 21 and the Statement on Forest Principles. The Nuuk Declaration paraphrased the Rio

Declaration's Principle 2 (an affirmation of the 1972 Stockholm Principle 21) concerning the rights and obligations of states to exploit their own resources without jeopardizing other states' rights. It further affirmed Rio's Principle 22 relating to the value and role of indigenous people and their communities in the achievement of sustainable development (AEPS 1993:3-4). Item 10 of the Declaration urged early ratification of Rio's Biodiversity and Climate Change Conventions (AEPS 1993:5). Here is a stronger nexus between responsibility for the Arctic ecosystem and responsibility in a much broader context.

Furthermore, two statements from the Nuuk Conference's Declaration are noteworthy in the context of the analytical template of this thesis, adding a measure of credibility to the emerging Arctic eco-management regime. They are Items 6 and 8 as follows:

> We believe that decisions relating to Arctic activities must be made in a *transparent* fashion and therefore undertake to facilitate, through national rules and legislation, appropriate *access to information* concerning such decisions, to participation in such decisions and to judicial and administrative proceedings.

(Item 6, emphasis added)

> We believe that development in the Arctic must incorporate the application of *precautionary* approaches to development with environmental implications, including prior assessment and systematic observation of the impacts of such development. Therefore we shall maintain, as appropriate, or put into place as quickly as possible, an *internationally transparent domestic process* for the environmental impact assessment of proposed activities that are likely to have a significant adverse impact on the Arctic environment and are subject to decisions by competent national authorities. To this end we support the implementation of the provisions of the Convention on Environmental Impact Assessment in a Transboundary Context.[326]

(Item 8, emphasis added)

Lastly, the Conference made an undertaking to consider the development of regional instruments concerned with protection of the Arctic environment (AEPS 1993:5). This acknowledgment that the Arctic was being considered a *region*, rather than a physical location containing eight sovereign states, and further, one which required the force of law to support transboundary eco-management objectives, was indeed encouraging.

The AMAP Task Force presented an updated report to the Ministers in Nuuk on issues of concern to the Arctic environment, including recommendations for action (AMAP 1993a). While all of the AMAP recommendations were important, some deserve special mention:

> It is [therefore] recommended that the eight Arctic countries undertake to support activities that will lead to the development of a *formal protocol* to control the emissions of heavy metals under the LRTAP Convention.

(AMAP 1993a:7, emphasis added)

Regarding radioactivity –

> It is recommended to:
>
> a) establish under the umbrella of AMAP reliable and comprehensive systems to identify and characterize present and potential sources and to monitor levels of radioactive contamination;
>
> b) ensure that nuclear installations that may affect the Arctic meet international standards established by the IAEA;
>
> c) initiate *actions to prevent* further increases in activity levels of anthropogenically-derived radionuclides irrespective of sources, and to reduce the levels, in order to keep the contamination as low as reasonably achievable, economic and social factors taken into account;
>
> d) initiate clean-up programmes for selected areas if needed.

(AMAP 1993a:5-6, emphasis added)

The Task Force was unable to provide the Ministers with comprehensive emissions and discharge data, a task originally assigned to them in 1991. They reported that this was due to the combination of a lack of data and restrictions on access to data imposed by various commercial and military authorities. Accordingly, they recommended that the Arctic 8, in cooperation with other appropriate organisations or under bilateral or multilateral agreements, undertake immediate efforts to:

> a) develop national emissions and discharge inventories of pollutants within the AMAP programme, including estimates of input due to ongoing operations and contamination due to current and decommissioned hazardous waste disposal sites;
>
> b) take *immediate steps* to reduce the most severe sources of emissions and discharges;
>
> c) take *immediate steps* to clean up severely contaminated environment areas (eg. waste and dumping sites).

(AMAP 1993a:8, emphasis added)

This was a significant step in the sense that the issues of radioactivity and emissions data are politically (and strategically) sensitive. Also to this end, it was recommended

that the participating AEPS states coordinate activities and, as appropriate, contribute the resources required to enable Russia to undertake necessary activities in three areas: i) attendance at meetings and workshops; ii) fulfilment of its state implementation plan; and iii) addressing of significant discharge, emission and waste site problems. The report noted Sweden's proposal that point iii) be 'put in brackets', indicating perhaps that Sweden was not interested in providing resources to help the Russians in this area (AMAP 1993a:9).

There is little doubt that this latter issue regarding Russia is essentially one of a compromise to the polluter pays principle. Indeed such a compromise would have been seen as necessary in order to assist the polluter to clean up, particularly since the entreaty necessarily involved financial as well as technical resources because in this case the polluter simply could not pay.

The next AEPS Ministerial meeting will be held in Canada in 1996.

4.9 Questions of Legitimacy, Effectiveness and Accountability: Early Assessments

From the information presented in this chapter, it is clear that the Arctic nations are building a regime for management of the Arctic ecosystem. The actors involved in the Rovaniemi Initiative were representative of all the rightful stakeholders: indigenous groups, the Arctic 8 and interested, non-Arctic parties. The boundaries of scope of the regime will eventually embrace both the essence and the periphery of the problem, although in its formative stages the regime is still coming to terms with the actual extent of the problem. Much is known about potential ecosystem threats, but much more information is required. However, if rhetoric is anything to judge by, the intent of the regime is to provide comprehensive pan-Arctic ecosystem protection through carefully coordinated state management.

In the global sense, the regime is showing a considerable measure of legitimacy as it respects and responds to linkages with other components of the international order which have a bearing on the objectives of the regime.

With regard to effectiveness, the regime's objectives at this early stage appear to be rather more generic than specific. However, with increasing information and confidence, the Ministerial Conferences have progressively shown a greater degree of commitment by using much stronger language and accepting recommendations from its monitoring and assessment task force. The appropriateness of the objectives to the

solution of the problem will become clearer with the passage of time. The anticipated phases of progress towards the stated goals were clearly outlined in the Figure 4 on p.210.

It is premature at this point in time to attempt to quantify outcomes. However the AMAP has been subjected to an independent audit of its first implementation plans and it did not fare particularly well. The audit was conducted by IASC, in collaboration with the International Council for Exploration of the Seas (ICES) (AMAP 1993b). The audit recommended, *inter alia*, that AMAP's plans should contain at least approximate information on the human and financial resources required, in order to provide a basis for rational decision-making by governments. Further, the audit exposed a need for some member states to be assisted in helping to fulfil the programme's objectives. This particularly applied to the Russian Federation (AMAP 1993b).

In addition to suggesting that the goals of AMAP were broad and somewhat ambitious, the audit criticised some of its specific projects. For instance, the link to state programs was thought to be very weak; the emphasis on monitoring rather than assessment was a failing; and because of these shortcomings, the first phase of AMAP was considered unrealistic (AMAP 1993b).

What the audit appears to indicate is that the Arctic states still have a huge agenda to be worked through. This is not surprising when you consider that the Antarctic Treaty Parties have taken over 30 years of cooperation to achieve a comprehensive environmental protocol, and they have done this largely by virtue of the entrapment of the issue of sovereignty in Article IV of the Treaty. The response by AMAP to this audit is not known.

In terms of accountability, the regime fares little better. The reporting procedures and transparency articulated in the Nuuk Declaration are positive signs of the regime's accountability. Unfortunately, compliance and enforcement mechanisms are totally absent and there are no regulations governing liability for harm. In fact there are no regulatory mechanisms at all. Because the regime does not have legally binding rules, the issues of compliance, enforcement and liability all become the province of state governments. The Arctic is comprised of eight sovereign states with varying Arctic interests, particularly in security matters, and with a varying propensity to take on board the enormous obligations imposed upon them by the AEPS. These factors were principal dimensions in the under-development of Arctic cooperation in the past. However, lack of accountability seems inherent in environmental law generally, so the Arctic is no different in this regard.

4.10 The AEPS and Responsibility for the Global Ecosystem

In terms of responsibility for the global ecosystem, the early rhetoric is encouraging. As indicated throughout the text, there is explicit acknowledgement of some of its key concepts. For example, acceptance of the new Agreement relating to the implementation of Part XI of LOSC by Canada, Denmark, Finland, Iceland, Norway, Sweden and the United States implies tacit acceptance of the common heritage of mankind concept which has legitimate standing within this Agreement. Furthermore, throughout the discussion presented above, direct references to both *future generations* and *precautionary behaviour* have been noted.

What is missing, and in fact what has turned out to be one of the most significant problems to date, has been the principle of the polluter paying. In many cases, the polluter is either the near-bankrupt Russian state or some unknown or unspecified out-of-area polluters whose actions have effects which are cumulative, widespread, indiscriminate and perhaps even unforseen. There is little that can be done to redress this in terms of past environmental practice and at present the best that the Arctic states can do is to jointly clean up areas which directly affect them as individuals. The future can be brighter, however, with general obligations imposed upon all states to become parties to other international agreements with a bearing on the state of the Arctic ecosystem. These agreements include the Espoo Convention on environmental impact assessment (see endnote 326).

The AEPS has been criticised for its failure to adequately address non-environmental interests. This is most likely a legacy of the Cold War, still fresh in the minds of Arctic diplomats. One perspective of Gorbachev's Soviet policy was that it was indicative of '...a growing awareness that a number of issues can be dealt with internationally *without* affecting vital security concerns' (Østreng in Stokke 1992:227). It is not known at this stage how much the new Russian alliance with NATO's *partnerships for peace* might enhance Gorbachev's policy of trust and optimism. In any case, two different approaches can be taken. One is that the AEPS was not the appropriate forum for addressing non-environmental issues and perhaps this should be more the province of the proposed Arctic Council. Or conversely it can be argued that there is almost no issue that can be considered non-environmental if, as this study suggests, there is an interdependence based on security, economics and the environment.

Notwithstanding, the regime's reluctance to impose strict regulatory mechanisms in its formative stages has also attracted criticism. One commentator noted for instance that '...all attempts to introduce *regulative* elements into the strategy document failed in Rovaniemi' (Stokke 1992:226). But this reluctance to rush headlong into a legally binding regime may be seen as a vital part of the regime-building process in the Arctic, as states tread cautiously in their new-found roles as cooperative partners. One of the inherent values of soft law which is particularly pertinent to Arctic relations is its role as a bridging mechanism which gives the participants valuable time to reorientate themselves into a more cooperative frame of mind.

On a more positive note, there is an encouraging process occurring within IASC which may have important political ramifications for the AEPS. IASC, at its 1994 meeting, constituted the program 'Sustainable Development in the Arctic'. This was added to the IASC Science Agenda, and is to be one of four program elements in the forthcoming IASC Arctic Science Planning Conference.[327] One of IASC's specific objectives regarding this initiative is to link the science and the policy communities, both of which have an interest in the subject of sustainable development.

This initiative is not the first in this issue area; it will stand alongside a number of other projects, including the AEPS Task Force on Sustainable Development, the Mackenzie Basin Impact Study and the Effects of Human Activity on High Latitude Biodiversity (HILBIO) project.[328]

Significantly, this Sustainable Development project aims at increasing IASC's knowledge about the Arctic by undertaking comparative research into such issues as the environmental and social impacts of different industries; of different Government economic and political systems and their policy-making processes; and of different northern communities and their industrial development. It may be that the greater theme of responsibility for the global ecosystem through effective regional ecosystem management will be found in a combination of the forces of both IASC and the AEPS.

4.11 Conclusions

The Arctic has been the theatre for superpower posturing and activity since the end of World War II. Within this climate of international tension, each state attempted to maintain its sovereign integrity, security and economic prosperity: a classic display of the minimalist approach to sovereignty. The notion of the Arctic ecosystem as a functional unit did not attract a high political profile until the Cold War no longer presented a barrier to cooperation.

When efforts to establish an integrated science management organization began there was still characteristic reticence to cooperate among the Arctic states. But gradually the enmity was replaced by a perceived need to act in concert. This was due in some measure to the recognition that there were many potential or actual transboundary environmental problems which required, in the first instance, further knowledge. It was acknowledged that the best way to acquire this information was to cooperate with others who also had a stake in the future of the Arctic as sovereign territory, as a homeland, as a laboratory, and as both a market and a resource. In terms of Arctic regime formation, the scientific communities were principle facilitators. Neither the United Nations nor environmentalists played a significant role in this part of the process.

Addressing the problem of integrating the scientific information into policy choice so as to create an effective environmental protection regime for the Arctic proved to be more difficult, however. The Polar Bear Convention aside, states had traditionally acted unilaterally, or at best bilaterally, on issues concerned with environmental management. With the AEPS they were still not able to step outside the traditional minimalist approach to sovereignty by creating legally-binding rules for ecosystem protection. But this is understandable given the historical primacy of the issue of sovereign integrity to the Arctic states. Notwithstanding, the fact that the AEPS does exist means that the first part of the process – that is, recognizing and defining the problems and setting broad goals and principles – has been completed. The onus on states to be responsible for implementing the AEPS is little different to the onus contained within the legally-binding rules of the Antarctic Treaty System, where compliance is also voluntary and based on flag-state jurisdiction.

The AEPS is an emerging pan-Arctic ecosystem management regime. Because it is immature and untested, there is plenty of scope for the regime to grow and achieve higher levels of effectiveness and accountability than it promises at the moment.

The formation of both IASC and the AEPS will no doubt enhance the picture of the Arctic as a region of inter-state cooperation and a region which is composed of divergent communities and governments all interconnected by common or overlapping ecosystems. Together they will undoubtedly be successful in stimulating meaningful cooperation on Arctic environmental issues in the future. But there is also plenty of unfinished business to attend to.

These issues will be addressed in the final chapter of this study, which will look towards the future of both the Arctic and Antarctic eco-management regimes. In

particular the concluding chapter will investigate outstanding matters like a Liability Annex for the Antarctic Treaty System and an Arctic Treaty or an Arctic Council for this evolving Arctic regime. In addition, the final chapter will investigate how the two case study areas deal with controversy and conflict; how they prioritise or reconcile the issues; and whether there is convergence or divergence in their perceptions of and methods for dealing with polar eco-management.

5

Comparative Analysis and Conclusions

Introduction

In the Introduction to this study, the Research Objective was stated to be the identification of factors which enhance or inhibit the ability of polar states to make effective environmental policy and law for their polar regions. It was further proposed that this particular analytical approach might be useful in illustrating the thesis that global ecological interdependence will require a re-examination of the traditional notions of sovereignty, to induce a more fundamental sensitivity to the ecological common good. This would be likely to place the ecological common good higher up the scale of political priority, thereby increasing the likelihood of more effective problem-solving through enhanced international cooperation and laws.

Chapter 1 developed the notion that there is a new paradigm of responsibility for the global ecosystem developing which embraces such concepts as behaving in a precautionary manner, having due regard for all humanity including future generations, developing resources in a sustainable manner, and having the polluter rather than the community held accountable for pollution. It was also suggested that such responsibility would not be the province of independent states alone, but would require international cooperation, as many problems are transboundary in nature. Therefore international regimes were considered to be the intervening variables between unilateral state action and the imposition of some kind of world governance. International regimes necessarily involve international cooperation and diplomacy. They contribute to the re-shaping of traditional notions of state sovereignty, promoting a permeability through state borders without unacceptable impost on sovereign statehood.

Chapter 2 elaborated on the contextual background of the polar regions, describing the historical partitioning of Antarctica and the emergence of sovereign statehood in the Arctic. It indicated that the conflict over who discovered Antarctica and had rights to

claim territory (and hence its resources) was part of the driving force behind the Antarctic Treaty of 1959. The Treaty suspended the notion of state sovereignty in favour of the common good in the Antarctic. The Treaty did not dismiss sovereign claims, but rather made provision for a workable compromise which facilitated the conduct of scientific activity in the whole of the continent. Chapter 2 also showed however, that in the Arctic the pursuit of sovereign autonomy has been paramount. The existence of military alliances, of strategic military locations and ultimately of superpower rivalry and the Cold War meant that the Arctic nations displayed classic minimalist behaviour towards each other. Consequently the notion of the Arctic as a region existed at best only in the minds of trans-border indigenous nations like the Sámi and the Inuit. Little in the way of pan-regional law or political infrastructure existed.

The two case studies contained in Chapters 3 and 4 have provided lengthy descriptions of how the polar regions have developed to their current level of environmental management, and the nature of such legal obligations that exist. Building on the information from Chapter 2, both case studies showed that cooperation in the field of science has been instrumental as a confidence-building measure. In fact, it appears to have been the crucial nature of polar sciences which has enabled the polar regimes to make strong environmental law and policy. However, while the eco-management regime of the Antarctic is contained within a legally binding Protocol to the Antarctic Treaty, no such legal obligations have yet emerged in the Arctic, although the foundations are there. This means that the level of responsibility evidenced by Antarctic states is far above that of Arctic states. This Chapter will discuss the reasons why this is so.

It will begin by analysing the differences and similarities between the polar regions and regimes in order to show how these variables are shaping polar environmental law-making. The Chapter will then determine whether the polar states have re-examined the issue of sovereignty and thus whether *de facto* internationalization is occurring. The comparative analysis concludes with a preview of polar management regimes in the future and a commentary on their agenda of unfinished business.

The thesis is concluded with some observations about the lessons of experience in the global context. It is noted that in the Introduction caution was expressed about using the polar regimes as models for the kind of new international strategic, economic, ecological and political order prescribed by the UNCED process. That caution is re-stated here.

5.1 Regional Idiosyncrasies and Polar Environmental Law-Making

It has been documented throughout this study that the polar regions are opposites in more ways than just geographically. Some of the more salient regional idiosyncrasies which influence the nature of environmental law-making and regime dynamics are examined below.

5.1.1 The Geographic Dimension

The relative proximity of the Arctic to Europe, Asia and North America means that it is vulnerable to human impacts through tourism, resource exploitation and transboundary pollution. This also means that emergency responses to catastrophes are marginally easier to deal with, with cooperation sometimes being a bigger inhibiting factor than location. However, these factors are only useful in the context of their relationship to the situation in the Antarctic.

The Antarctic is either a long sea voyage or a long plane trip away from major centres. While this affords the southern continent a greater degree of protection, it also makes emergency response that much more difficult and hazardous. Cooperation, or lack of it, is not so much of an issue in the Antarctic, compared to the logistics of finding environmental pollution and restoration or clean-up activities.

Accordingly, both polar regimes have acknowledged this issue of proximity by formulating, or providing for the formulation of, emergency preparedness and response strategies and regulations.

5.1.2 The Peripheral Locus of Decision-Making

The study has also illustrated that the locus of decision-making is peripheral to both polar regions. This has had interesting repercussions for the Antarctic because the states which make Antarctic laws (with the possible exception of the claimant states) are far removed from the object of their policies, both physically and in some senses, politically. This factor has enhanced the ability of the Antarctic Treaty Parties to make environmental law. Their motivation to make laws and the application of those laws have very little *direct* affect on the populations of Antarctic Treaty states; the economic policies of those states;[329] or in many cases strategic security.[330] The Antarctic Treaty Parties can thus afford to negotiate more stringent environmental safeguards than they possibly have in domestic law. But the same cannot be said for the Arctic.

The peripheral locus of decision-making has been more disadvantageous in the Arctic because there are people involved: people who vote; people who have lived in the region for generations and yet have largely been excluded from the making of decisions which may have a profound effect on their lives and livelihood.[331] This not only applies to government decisions, but to those decisions of the environmental advocacy as well.

The environmental advocacy's encroachment upon traditional cultures (for example, the urging of Greenlandic whalers not to hunt whales, or of Canadian Indian fur trappers not to trap, because these practices are anachronistic to some people's 20th century values) is seen as an insult and an absurdity by many indigenous communities. Arctic people find themselves in a dilemma, having grown accustomed to 20th century benefits like transport, communication, health and education services, yet being harassed into defending their traditional ways of life. The solution is for them is to participate in the making of decisions which directly affect their communities.

The indigenous groups have been granted observer status within the AEPS, yet they remain separate from it by choice. The Inuit, for instance, declined a place on the official Canadian delegation to the AEPS because they felt it would compromise their fight for self-determination (Reimer, pers.comm). The AEPS does make many explicit references to the role of indigenous people in formulating Arctic eco-management philosophy and policy, but it remains to be seen whether the native people of the Arctic are content with their level of participation.

If the Arctic governments, located well outside the physical parameters of the Arctic regions are to make effective, appropriate ecosystem policies, indigenous communities must become active participants in the processes. To this end, the ICC has produced a two-volume appeal to the Canadian Government Department of Indian and Northern Affairs, titled 'The Participation of Indigenous Peoples and the Application of their Environmental and Ecological Knowledge in the Arctic Environmental Protection Strategy'.[332] In this appeal it is reported for example, that one of the barriers to indigenous peoples' participation is science, specifically the traditional indigenous perspective that: '...the findings and opinions of scientists are important parts of *southern* decision making' (Brooke 1993:17, emphasis added). Essentially Arctic sciences are being conducted *on* Arctic people (and ecosystems), and not *by* Arctic people. They believe there is potential for a greater margin for errors of fact through misinterpretation or deliberate mischief on the part of the subjects being studied.[333] This kind of opinion leads to wider issues of community involvement and community education, and is compatible with the Rio Earth Summit's proposals on the

empowerment and capacity-building of indigenous nations generally (United Nations 1992:Ch.26).

Arctic indigenous people will continue to lobby for greater participation in Arctic policy- and law-making. The values of indigenous tradition and experience are acknowledged within the AEPS, but a mutually respected intercourse between Arctic officials and indigenous groups will be required to keep the rhetoric alive and meaningful.

5.1.3 The Demographic Dimension

The most salient difference between the Antarctic and the Arctic, therefore, is that while the northern polar region is primarily a *home* to the population, the south is primarily a *workplace*. Arctic environmental policy exhibits a humanitarian dimension, and policy-making both acknowledges indigenous interests and includes indigenous groups in the negotiation process. This is demonstrated in the AEPS in terms of both its rhetoric and the make-up of its membership. By contrast, Antarctic policy can afford to be, and is in fact, more utilitarian in its focus and purpose.

Both polar regimes address the protection of *ecosystems*, but whereas the AEPS defines the Arctic ecosystem to explicitly include humans, the Madrid Protocol does not; rather it provides protection for human *uses*, with priority given to scientific research.

Two fundamental elements are hereby acknowledged: first, that any successful Arctic ecosystem management regime will both acknowledge the presence of indigenous people and seek their participation; and second, the divergent uses of the Arctic and the Antarctic are a law-making variable of considerable importance.

5.1.4 Permitted Uses of the Polar Regions, including Resource Exploitation

The Arctic polar region is partly high seas, where use is both directed and protected by international law. Although the sector principle has been applied to sections of the Arctic Ocean to the North Pole, it remains unenforced officially. Regulation of human activity is extraordinarily difficult because the onus is on Arctic rim states as sovereigns to regulate the kinds of activities permitted in their polar territory. Accordingly, standards and permitted uses vary between the states. Further, because resource exploitation, tourism, fishing, military and other activities are well-

established, attempting to regulate use *after the fact* has been the single most vexing problem facing the Arctic states.

The permitted uses of the Antarctic, on the other hand, are encoded into the original Antarctic Treaty, which deems that the continent must be used for peaceful purposes only, specifically scientific endeavour. Each legal regime additional to the original Treaty has attempted to further regulate aspects of human activity. That this was achievable is largely because the scale of activity was, and still is, modest by comparison with the Arctic. In fact, not only is Antarctic activity modest, but it is not of great economic importance, and to western economies, generally unprofitable.

This study has illustrated that while a symbiotic relationship between the ecosystem and development is desirable, it is a particularly problematic objective in the Arctic because of the existence of unrestricted use patterns. The Antarctic, on the other hand, is in a much more advantageous position in this regard because its use patterns are regulated and formally codified. The Arctic has large-scale, varied and profitable resource exploitation, therefore environmental policies must take account of both the industrial stakeholders and the economic priorities of state governments. Accordingly the AEPS sought, as an explicit objective, the *sustainable utilization of natural resources*. The Antarctic supports only a small-scale tourism industry and a Southern Ocean fishery, both of which come under the aegis of state governments, with varying degrees of obligation to the legal regimes within the Antarctic Treaty System and outside it. The Madrid Protocol does not expressly refer to the sustainable utilization of natural resources, but this is implicit through its direct relationship to other components of the Antarctic Treaty System, particularly CCAMLR, which does express this sentiment.[334]

The problem in the Arctic is that resource exploitation is a fact and the Arctic states have had to reshape their relationships with each other in order to achieve cooperation on environmental matters relating to resource use.[335] The AEPS is a beginning, but the process is neither near completion nor without its problems. For example, one commentator has noted that: '...in most of the projects where Russia has begun to change its ways, Norway or other Western states have promised to pay a considerable part of the bill' (Stokke 1994:22). The polluter pays principle, one of the key concepts identified earlier in this work, is being invalidated because the polluter – Russia – cannot pay.

The Antarctic Treaty Parties too, have had to re-evaluate their relationships in light of the failure of the Minerals Convention. They have done this successfully by

establishing the Madrid Protocol, which places a prohibition on mineral resource activities, and maintaining the *status quo* regarding claims to sovereignty.

5.1.5 Transport

The Arctic Ocean is a major shipping route. In addition there are trans-polar air routes. The volume of sea and air transport through the region is restricted somewhat by weather conditions. However, in peak times the transport volume is high enough to cause problems with regard to such incidents as rescue and potential pollution catastrophes, of which an *Exxon Valdez* -type disaster is a prime example. The opening of the Northern Sea Route has the potential to further exacerbate the problem and it has been suggested that this issue be dealt with under a separate legal regime (Timchenko 1994:199). Despite concern over the NSR in particular, in general there are existing legal regulations governing sea and air transport which are applicable and have been acknowledged in the AEPS. However, these were not considered adequate.

In the Antarctic, vessels and aircraft in the vicinity are either logistic support for scientific bases or small tourism ventures. The Antarctic Treaty, and its connections with other relevant international law, provide adequate regulation for the small volume of shipping and air traffic in the region. The Madrid Protocol's Annex IV on the prevention of marine pollution is closely linked to MARPOL, which has now designated the Antarctic a Special Area under its Annex II.[336] In addition, it was noted earlier in this work that the Basel Convention expressly prohibits the export of hazardous wastes to the Antarctic. Such regulation that does exist cannot prevent accidents in either region, however, and both polar regimes have in place, or anticipate the adoption of emergency plans for such a contingency.

5.1.6 Fauna and Flora Protection

The Arctic has substantial terrestrial floral communities, and faunal populations which in many cases migrate across politically-defined borders. Their protection, including maintaining the viability of habitats, has an added dimension in that much of the fauna is hunted by subsistence indigenous hunters, often travelling in communities alongside their herds or following migratory routes. The regions where the herds, feeding grounds and hunters are located require careful and thoughtful management, taking into account traditional use while at the same time respecting other uses. Imposing artificial restrictions on one element of the ecosystem, say for instance by applying a quota on a particular species, may have repercussions further along the ecosystem. It is known for instance that the Finnish government induced some of the Sámi reindeer

herders to establish farms and become viable economic businesses. To help achieve this the Sámi were provided with all-terrain vehicles - snowmobiles - with which to muster their herds. The use of these vehicles has had the unforeseen impact of adding to the destruction of fragile wilderness areas. The Norwegian Government, on the other hand, has closed down many Sámi-run reindeer farms because they were not economically viable. Because the farmers have no other skills, they are now unemployed and some have remained *unemployable*. (Helander, pers.comm).

The comprehensive protection of Arctic flora and fauna is still in an embryonic stage, with that elusive balance still to be determined. The only real success story in the Arctic has been the protection of Polar Bears.

In the Antarctic, the protection of fauna and flora has achieved more formal expression within the Antarctic Treaty System. Through the legal regimes of the Agreed Measures, CCAS, CCAMLR and the Madrid Protocol (which includes a specially protected and managed area network), species and habitat protection is comprehensive. However, the degree to which it is effective is another matter.[337]

5.1.7 Ecosystem Policies, Cooperation and Responsibility

Like any other areas of the world, the polar regions have suffered from the failure of governments to take an holistic, ecological view of their environments. While use patterns have been modest, impacts have remained small. While cumulative and transboundary effects have remained below the risk threshold, governments have felt complacent about them. Complacency has often been a product of ignorance. In earlier times, scientific information on the creeping impacts of ecosystem harm was just not available, and to a certain extent consequences and significance are still unknown variables today. But with the increasingly popular invocation of the precautionary approach, ignorance is no longer an acceptable excuse for complacency.

The Arctic nations have traditionally responded to obvious or potential ecological problems with a range of agreements, mainly bilateral in nature. However, this approach has proven to be totally insufficient for ecosystem protection. Overarching holistic management has been restrained, primarily because inter-state relationships were based on the Cold War brinkmanship which subsumed most issues under the more formidable ones of sovereignty and security. Furthermore, the kinds of structural changes required to address the problem of ecosystem management were beyond the reach of even the most well-intentioned Arctic nation on its own. That is,

until the confidence building measures provided by President Gorbachev's Murmansk speech and the establishment of the International Arctic Science Committee.

These two events endowed the ice states with the assurance that pan-Arctic cooperation *was* attainable. However, reaching accord on cooperative management of Arctic ecosystems was a far cry from the more innocuous agreement to cooperate in the coordination of scientific endeavour. The latter did not involve any abrogation of sovereignty; it required little in the way of extra financial input; and it had the potential to bestow enormous benefits on the participants. In short, there was very little risk attached to participation in the IASC. Notwithstanding, the Arctic states have come to agreement on the AEPS and have begun a process towards more comprehensive protection of the Arctic environment than would have even been thought possible a decade ago. This is surely an optimistic sign that inter-state relationships might be recast in favour of an enhanced emphasis on the common good and hence a greater degree of responsibility. This last comment is made cautiously, however, in acknowledgement of the enormous amount of ground still to cover with regard to formalizing and codifying the guidelines contained within the AEPS.

While the problem of eco-management is common to both polar areas, only the Antarctic had a suitable infrastructure in existence to deal substantively with the issue. The infrastructure proved to be extremely useful in constructing the Madrid Protocol because much of the ground work had already been completed in earlier attempts at issue-specific resource management. Furthermore, there were valuable lessons of experience for the Treaty Parties from those attempts like CRAMRA which did not succeed.

The mechanisms already in place within the Antarctic Treaty System meant that states simply had to consolidate all of the environmental principles and objectives scattered throughout the existing legal regimes and to reach consensus on such new elements as the mining prohibition and the EIA process. This they were able to do, in the astoundingly quick time of just two years. This is why they will be seen as exhibiting a greater degree of responsibility than the Arctic states.

5.2 The Re-examination of Sovereignty: Some Conclusions

Has this study provided evidence to support the re-examination of traditional approaches to sovereignty in the polar regions, and can it be said that *de facto* internationalization is occurring?

Both polar regimes have been able, to a degree, to reconcile development with the ecosystem by mobilizing in tandem the principles of resource exploitation and environmental protection. Both regimes have existing development projects (if the Antarctic science programs could be considered *developmental*) and mechanisms through which attempts are made to mitigate any environmentally-unfriendly impacts. New projects, however, will have to undergo more stringent environmental impact assessment procedures. This is formally codified through the Madrid Protocol, and urged through the AEPS and its reference to the Espoo Convention. Furthermore, each regime expresses its desire to maintain biodiversity, and to protect ecosystems, natural resources, cultural and heritage values. The principal difference between the regions is that the rules will be legally binding on all Antarctic Treaty Parties once the Protocol enters into force, and possibly on third parties through the evolution of customary international law; but in the Arctic, no such legal obligations exist in the present form of the AEPS. While the principles are fundamentally the same, the degrees of accountability and liability are not.

Therefore, with regard to sovereignty and the common good, the regions show quite distinct differences which are then reflected in regime nature and dynamics. Sovereignty is generally undisputed in the Arctic, with only some outstanding issues being related to maritime boundaries. In its treatment of the question of sovereignty, the AEPS advanced from being protectionist and elitist in its early days, towards being more broad in its interpretation of Arctic interests. However the fact remains that the AEPS has a core of decision-makers representing the eight rim states only. The sovereign integrity of the Arctic 8 has thus been given priority. Further evidence of this can be found in the fact that in this early stage of the development of the AEPS the Arctic states were unwilling to negotiate legally binding rules.

However, the fact that the eight Arctic states managed to sit at the conference table together and, in the first instance, establish a cooperative scientific organization and then articulate their regional protection strategy, leads to the tentative impression that at the very least the nature of cooperation is in transition. The scientific organization - IASC - has embraced interests outside the Arctic 8, albeit with observer status only. In so doing, it has opened the organization to both the scrutiny of, and to a limited extent the input of, *outsiders*. This relatively noble pursuit of cooperative, trans-state science is one thing, however; cooperation towards protection of the Arctic ecosystem is quite another.

There is little evidence to suggest that a re-examination of the traditional minimalist approach to the coexistence of sovereign states in the Arctic is occurring. Nor is it

appropriate to conclude that *de facto* internationalization is occurring. It is true that the pretexts of communism and the Cold War diplomatic inhibitions no longer exist; that the Arctic States are using a soft law approach to eco-management, while they gather confidence and trust amongst themselves; and that their motivation in the making of Arctic environmental policy is not only in the state interest, but also in the interest of the Arctic as a region. In addition, it is certainly appropriate to propose that the Arctic has a stronger regional identity than has been apparent in its recent past, due in some measure to the higher profile of epistemic communities like IASC, the ICC and other regional entities. However, without the force of legally binding rules, or a treaty of some kind, the thesis is not supported in this instance.

On the issue of *de facto* internationalization, it is too early to be sure, but the suspicion is that the same situation which would indicate a new approach to sovereignty would also herald a stronger international element of involvement in Arctic affairs. Internationalization would involve more states than just the eight rim states - an arrangement similar in fact to that which has occurred through the mechanism of the Antarctic Treaty System.

It may be more appropriate to conclude, therefore, that building upon the momentum of IASC and the AEPS, the Arctic states will look towards a future in which there exists the first pan-Arctic treaty, embracing the essence of both of these arrangements. However, at the present such optimism is only a dull glow on the horizon. The Cold War is still fresh in the minds of Arctic governments and the barriers to effective ecosystem policy- and law-making are slowly being eroded, but they will not vanish overnight. (The next section of this Chapter looks at the case for an Arctic Treaty.)

By way of contrast, Antarctic sovereignty has been described as a 'brain teaser' (Heap 1990b:182) which is essentially *controlled* under Article IV of the Antarctic Treaty. Article IV reconciles sovereignty, in the sense that the seven claimant nations, along with the two which reserve their rights to claim, and any other Treaty Contracting Party for that matter, have had their positions suspended by the Article's provisions. Furthermore, each of the additions to the original Antarctic Treaty which make up the Antarctic Treaty System have been possible largely *because of* Article IV. In the words of John Heap, Article IV has provided: '...precedents and mechanisms which allow states to be less strident about sovereignty and enable them to concentrate more easily on the real nature of their interests.'[338] Obviously these interests now concern the comprehensive protection of the Antarctic environment and dependent and associated ecosystems.

The System has been successful in achieving such a far-reaching instrument as the Madrid Protocol because the agreement did not come at a cost in economic terms, nor in terms of any further abrogation of sovereignty. Some sovereignty was surrendered initially when states expressed their consent to be bound by Article IV of the Treaty. A possible exception may be the case of the Protocol's ban on mineral resource activities. However, while that ban applies to *all* Antarctic Treaty Parties, irrespective of their status, and may in the future be applied to third states through customary law, it is a stalemate situation in which nobody wins but nobody loses either.

In the case of the Antarctic, it is appropriate to conclude therefore that the issue of sovereignty has enhanced rather than inhibited the making of eco-management policy and law. Furthermore, *de facto* internationalization has been a feature of the ATS since the inception of the Antarctic Treaty, by virtue of the suspension of the sovereignty issue; by its invitation to any member of the United Nations to join; and by its desire to keep the continent free from discord for the benefit of all mankind. Of note, however, is the fact that the ATS does not have a permanent Secretariat and hence there is no symbolic central edifice on which to fly the flags of the 42 countries involved in Antarctic management. Rather, the services of a Secretariat are supplied by the government hosting the next meeting. In addition, the Government of the United States - as depositary - plays a centralizing role. The absence of a formal Secretariat may be a further inducement to cooperation, as some states are suspicious of the political functions of centralized administrations.[339]

While each polar regime pays homage to the *collective good*, sceptics would argue that these acknowledgments lack altruism. *Mankind as a whole* will benefit from the comprehensive protection of Antarctic environment and its dependent and associated ecosystems, and *future generations* will benefit from the safeguarding of the Arctic environment. Presumably these objectives will be accomplished through maintaining the ability of the scientific communities to continue their global impacts research in near-pristine, polar laboratories. Scientists have been accorded priority status in the Antarctic, while indigenous people have been granted a similar status within the AEPS. However, no rules exist to confer obligations on state governments to acknowledge the status of indigenous people in the Arctic. Moreover, the issue of sovereignty is overarching. The Arctic nations do not have the benefit of a closed option Antarctic Treaty Article IV to guide their behaviour. Therefore the AEPS represents a major policy shift for them, more so if legal obligations can be established in the future.

The study has indicated that a growing feature of international environmental law involves promoting common problem-solving through cooperative treaty-making,

which necessarily implies some limitations on the traditional notion of sovereignty. It must be remembered, however, that the Arctic rim states are sovereign nations and the claims to Antarctic territory are legal facts. These issues have been tenuously reconciled in the Antarctic, but are still contentious in the Arctic. Unless the imperatives to put the minimalist approach to sovereignty on the back-burner in favour of a greater accommodation of the common good are maintained in the Arctic, the situation there could easily remain one of sovereign mismanagement of what many see as common resources. Legally binding regulations would then be required to replace the voluntary ones contained in the AEPS.

This is where the issue of security comes into play. This study has argued that there is a trend towards redefining security from its traditional military orientation. This is largely a post Cold-War phenomenon in which the word *security* invokes not only strategic militarism but also the protection of resources vital to survival. The fact that these resources might be protected through *military* means is a moot point. A re-examination of security not only involves the maintenance of sovereign jurisdiction over territory, but also the maintenance of the integrity of the ecosystems within that territory. There would seem to be a conflict between maintaining sovereignty and maintaining resource security. This is particularly so since resource security may be compromised by the actions of the sovereign state itself, as well as by neighbouring jurisdictions. Where a resource is subject to overlapping jurisdictions, the common good should prevail, although environmental law evidences many cases where this does not happen. International rivers and the corresponding riparian water rights and obligations are cases in point.

The study also proposed that there would be a point at which each of these elements – the environment, development, the common good, sovereignty and resource security – might be in a theoretically desirable state of harmony. Given all the philosophy and the facts presented so far, it is acknowledged that this is an ambitious statement, to say the least, as any judgment is value-laden. In the context of the Antarctic, it is likely that once the Madrid Protocol is in operation, and providing its intent can be matched by practical application, such an equilibrium might be reached. Any proposed activity will be subjected to an environmental impact assessment. Any activity which proceeds will be judged by the Protocol to be acceptable. This means that the spirit and principles of Antarctic Treaty are vindicated, implying no compromise to either sovereign claims or the common good. It would also imply that resource security is maintained. Therefore a desirable state of harmony would be achieved. The same cannot be said for the Arctic, simply because there is, as yet, no legal obligation to conduct environmental impact assessments and no legal obligation to comply with fundamental principles.

In summary, using the original template, the overall performance rating to date of the polar eco-management regimes can be summarized thus in Figure 5:

ANALYTICAL PARAMETERS	ANTARCTIC MADRID PROTOCOL	ARCTIC AEPS
LEGITIMACY	High	Medium-High
EFFECTIVENESS	Medium	Low
ACCOUNTABILITY	High	Medium
GLOBAL ECOSYSTEM RESPONSIBILITY	Medium	Medium

Figure 5. Overall Performance Rating of Polar Eco-Management Regimes

This Figure is to be read in conjunction with Figure 2 on p.62. With regard to legitimacy, both regimes score well because of the nature of regime formation, that is, they were negotiated by able, respected actors who acknowledged external factors likely to impinge upon the regime's objectives and function. In both regions there has been adequate external acceptance, although in the Arctic the indigenous groups are still concerned about their level of participation. Despite the activity of the common heritage protagonists with regard to the Antarctic, no state is precluded from entry into the regime. This represents the difference between a high and medium-high score.

In terms of effectiveness, neither regime has a proven success rate, primarily because of the analytical difficulties with the notion of effectiveness discussed earlier. However, it is appropriate to give a higher score to the Antarctic regime because of

evidence of changes in actor behaviour brought about by the Madrid Protocol even prior to its entry into force. In addition, the actors can be seen to be attempting to meet the aims of the regime; they have proven their capacity to change; there is a reasonable measure of internal compliance; and external linkages and approval is strong.

Accountability was stated to stem from both legitimacy and effectiveness and the measures of conformity and public transparency exhibited by a regime. In both cases the regimes score well, but the Antarctic regime more so because of its unprecedented inspection procedures, EIA processes and the public release of all documentation. The lower score for the AEPS is indicative of its immaturity as a regime.

With regard to the notion of responsibility, while the Antarctic Treaty System has scored well in terms of regional responsibility through its comprehensive Madrid Protocol, the opposite is true of the Arctic. Its level of responsibility in a local context is low, primarily because the AEPS as an emerging regime does not yet contain legal obligations and its effectiveness is unknown. However, in a global sense both are addressing the analytical parameters described in Section 1.3, albeit cautiously. Neither concede directly the notion of common heritage, nor do they adequately address the polluter pays principle. But by giving the Madrid Protocol a possible life-span of 50 years, some measure of respect for future generations is shown; and the Arctic states have addressed this concept openly in the AEPS. Furthermore, the conduct of environmental impact assessments is precautionary in nature, invoking the notion of sustainable development. However, while EIAs will be mandatory in Antarctica, no such obligations exists for Arctic states as this stage.

In conclusion, with particular reference to the issue of sovereignty it is interesting to note that the states with bi-polar interests, that is Norway, Sweden, Russia, Canada, Denmark and the United States, have used the maintenance of their sovereignty as an excuse to resist pan-Arctic environmental law-making, whereas those same states have effectively eschewed sovereignty questions in the Antarctic. They have done this firstly by becoming members of the Antarctic Treaty and thereby subjecting themselves to the specific provisions of Article IV. For Sweden and Canada, this did not present a problem as they were not claimant states. But Norway has a substantial claim to Antarctic territory, and both Russia and the United States have reserved their rights to claim. The situation with regard to Denmark is somewhat different as they only represent Greenlandic foreign affairs. Secondly, all states were participants in the Madrid Protocol negotiating process. This underscores the argument that the traditional approach to sovereignty might be politically expedient: claimant states from the Arctic could very easily negotiate strict environmental controls on their behaviour in the Antarctic simply because it did not involve any further abrogation of

sovereignty; nor did it involve any strong financial commitment other than an environmentally-acceptable re-evaluation of the processes of expedition and station management. These two variables would represent a financial expenditure of little consequence considering that any one of these three states could scale down its Antarctic operations if necessary without jeopardizing its status within the ATS. Russia has, in fact, done this already. The same would not be true for their participation in the AEPS process, however, where there are real economic and security considerations - and by implication, the concerns of voters.

5.3 The Future Agenda of Polar Ecosystem Management Regimes

Having come this far, both polar regimes still have many outstanding matters to address. For the Antarctic Treaty System, an issue which has the potential to be one of the most contentious since the mining ban was agreed to is the negotiation of a liability annex to the Madrid Protocol. The Arctic states may seriously address the notion of an Arctic Treaty at some point in the near future. Both of these issues, which will be looked at briefly here, are bound up with the issue of sovereignty. In addition, both regimes must now accommodate individual obligations and rights according to the Law of the Sea within their approaches to polar management.

5.3.1 A Liability Annex to the Madrid Protocol[340]

Article 16 of the Madrid Protocol reads as follows.

> Consistent with the objectives of this Protocol for the comprehensive protection of the Antarctic environment and dependent and associated ecosystems, the Parties undertake to elaborate rules and procedures relating to liability for damage arising from activities taking place in the Antarctic Treaty area and covered by this Protocol. Those rules and procedures shall be included in one or more Annexes to be adopted in accordance with Article 9(2).

The Madrid Protocol has five Annexes which form an integral part of the Protocol, and other annexes like this one for liability are envisaged. As discussed earlier in this work, the issue of liability arose under CRAMRA and was incorporated into its Article 8. The nuances were never put to the test, however, as the Protocol superseded CRAMRA before it entered into force. A much weaker provision was included as Protocol Article 16, and significantly – unlike CRAMRA – the operation of the Protocol was not made conditional upon the inclusion of liability provisions. Also

important is the fact that Article 16 does not specify a time frame within which the annex is to be concluded.

These factors seem to indicate one of two things: either the Treaty Parties did not consider the issue of liability as important as they had under CRAMRA; or that the Parties had not been sufficiently in agreement about liability at the time of concluding the Protocol to flesh out the details. Given the modern trend in international law-making to conclude framework instruments which defer more contentious issues or details to a later date to be appended as annexures, the latter assumption about liability seems the most likely one. In any case, liability is now firmly on the Antarctic Treaty Consultative Meeting (ATCM) agenda.

The details which will need to be given substance concern such legal choices as the standard of liability; what excuses or defences should be permitted, if any; who would be the appropriate debtors and plaintiffs; what kinds of remedies would be available; what forum would be suitable for adjudicating actions; and should there be limits on liability and compensation?

In order to assist the Treaty Parties in making choices about the legal nature of liability, they first need to do two things: confirm their policy basis for taking such action; and define what they mean by *damage*. The fundamental policy basis will likely rest on the *polluter pays principle*, as this is the essence of the legal meaning of liability. Once polluters know they can be held accountable, liability provisions will be a deterrence as well. In addition, the provisions may be used as a legal mechanism for obtaining restitution and compensation for damage to the Antarctic environment. This will require the elaboration of both a definition of damage and conduct which will attract liability.

At the XVIIth Antarctic Treaty Consultative Meeting in Venice in November, 1993, a meeting of legal experts (under the Chairmanship of Professor Rüdiger Wolfrum of Germany) was convened to deal with the Parties' obligations under Article 16. That group reported its progress to the XVIIIth ATCM in Kyoto in April 1994. It was proposed that intercessional meetings be held to continue the work of the expert group and that they will report again to the XVIXth ATCM in 1995 (ATCM 1994:10-11).

5.3.2 An Arctic Treaty or Council?

There are as many good reasons for proposing an Arctic Treaty as there were for proposing an Antarctic one. The bottom line is that a treaty would give legal effect to the public policy of the Arctic states, particularly now that they have acknowledged the

transboundary effects of some pollution and made a declaration of their desire to protect the Arctic environment.

The issue of an Arctic Council was discussed in Chapter 4. An Arctic Treaty has been drafted, and is presented here as Appendix 6. Although called an Arctic *Treaty*, the document reads more like a draft constitution than a treaty. It contains no legal obligations, *per se*, but mandates a Commission to '...decide on measures to fulfil the purposes of the Council...' (Draft Article 4.2). The assumption here is that this kind of provision would allow the Parties to make binding regulations as and when necessary. This is not unlike the mandate contained in the Antarctic Treaty's Article IX.

In fact, a cursory glance at the Draft Arctic Treaty shows many similarities between it and the Antarctic Treaty. The Antarctic Treaty began as a rudimentary instrument containing some essential principles, the hub being Article IV. But because of the pre-existence of sovereign states, the Arctic states cannot be expected to treat the issue of sovereignty in the same way. Therefore an Arctic Treaty would most likely have an emphasis on facilitating cooperation by designing a procedural mechanism to overlay but not necessarily pose a direct challenge to the legal rights of these coexisting sovereignties.

It seems likely that the Arctic states *will* move towards the establishment of an Arctic Council; mostly it was the United States which stood firmly opposed to this proposition but it is believed that the US has changed its position recently. The establishment of the Council would certainly give enormous political impetus to the AEPS and this would be a positive step towards more legally binding rules for such concepts as sustainable development of the Arctic region.

5.3.3 The Law of the Sea Convention and the Polar Regions

The issue of off-shore jurisdiction in the polar regions has not been dealt with separately in this study because the polar regimes (other than CCAS and CCAMLR) have not dealt with it as a separate issue. Rather, offshore jurisdiction is an integral component of polar eco-management. Notwithstanding, the entry into force of LOSC on 16 November 1994 is one of the most significant events to occur in recent times, although much of the Convention was already a part of, or in the process of transition into, customary international law.

The partitioning of the world's oceans into territorial seas, and exclusive economic zones, and a deep sea bed which is now the common heritage of mankind, has

gradually diminished the area of the high seas and altered the whole notion of ownership of the oceans. A prime example occurs in the semi-enclosed Arctic marine area, where six states (not including, in this instance, Sweden and Finland) are littoral states which assert jurisdiction over marine areas.

Importantly, almost one-third of the LOSC has an environmental flavour, principally contained within Part XII. Hence, despite the fact that only Iceland has ratified the LOSC,[341] it has become even more imperative that the Arctic nations coordinate their ecosystem policies, as the marine areas of the Arctic are now *formally* subject to the provisions of the LOSC.

There are many aspects of the LOSC with relevance to the polar regions, and one of the most salient is the expansion of offshore jurisdiction through the declaration of exclusive economic zones (Part V). In the Arctic, terrestrial sovereignty is not an issue, *per se*. Moreover, maintaining sovereignty over the myriad of offshore islands ensures that Arctic states can extend their jurisdiction further by using those islands as baselines for delimitation of their exclusive economic zones. Jurisdictional issues in the Arctic are primarily complicated by conflict over certain maritime boundaries, and while the LOSC does not resolve these questions, it does provide another platform for negotiation towards their solution.

In the Antarctic, the issue of extended jurisdiction is enveloped in the debate about whether, in law, there are any coastal states *per se*. This issue has been raised as a consequence of the existence of Article IV of the Antarctic Treaty.[342] Not only does Article IV suspend any action regarding claims, but it maintains the position that all states are free to either recognise or reject claims at their discretion without jeopardizing the *status quo*. As discussed earlier, the status of Antarctic claims, which are facts in law, has not been resolved. One clue which may help in this dilemma is contained within CCAMLR where Article IV.2(b) states that:

> 2 Nothing in this Convention and no acts or activities taking place while the present Convention is in force shall:
> …
> (b) be interpreted as a renunciation or diminution by any Contracting Party of, or as prejudicing, any right or claim or basis of claim to *exercise coastal state jurisdiction under international law* within the area to which this Convention applies…

(emphasis added)

This wording indicates that coastal states *do* exist in the Antarctic. But whereas EEZs have been declared off Antarctic island territories, proclamations off *continental* territory invite controversy.[343] The Latin American states of Chile and Argentina have

both declared a 200 n mi 'patrimonial sea' which extends to the reaches of the Antarctic Peninsula. But Australia, in a rather contentious move, has now declared an EEZ off its Antarctic Territory, as a part of Australia's external territories to which its domestic enabling legislation applies. This action was taken as a general right under the LOSC, to which Australia is a party.[344]

The declaration invites two perspectives: either Australia could be seen as having *enlarged* its Antarctic claim, contrary to Article IV of the Treaty; or Australia could be considered to have acted within its capacity as sovereign and within the parameters of Article IV.2(b) of CCAMLR cited above. The dilemma for the Australian Government is that it must be seen to maintain its substantial claim to Antarctic Territory (42% of the continent) or run the risk – however remote – of jeopardizing that claim. The proclamation of an Antarctic EEZ has given validity to Australia's claim, along with all other actions it has taken with regard to its territory in the Antarctic, but it remains to be seen how this event will be perceived by the Antarctic community, and whether other continental claimants will follow suit.

Surprisingly, Australia's legislation does not elaborate on the process of baseline determination. Because of the presence of ice, in many cases it will be impossible to distinguish a terrestrial low water mark from which to begin measuring the breadth of territorial seas. Ice shelves are permanent but they advance and retreat according to the seasons, which also makes it difficult to predict the precise location of the ice edge from season to season. Nevertheless, one solution to the delimitation problem might be found by specifically amending LOSC to allow for the unique situation of the polar ice-shelves by including the ice-edge as a valid baseline.[345] The amorphous nature of ice shelf edges is such that the baseline could be determined at a specific point in time, say the summer minimum extent of sea ice, or any other time to which the Parties agreed. A standard deviation of a designated distance would allow for normal seasonal advance and retreat of the ice.

The issue is likely to be resolved once international law decides on the status of ice – whether, for instance, it is water or land.[346] One perspective is to consider that ice is water in an altered state; however there is also considerable scope to consider a physical analogy between ice shelves and land, because that they are both stable (except the seaward ice margin), exploitable, durable, permanent (to a degree) and capable of occupation. One conclusion might be, in this instance, that '...ice shelves functionally subsist as land' (Joyner 1991:227). But this perspective does not take account of the marine ice-shelves which float, nor of the legal status of water which flows beneath a floating ice-shelf. The counterfactual argument is that if you consider ice-shelves to be water, and thus high seas, you may not be able to exercise

the traditional freedoms and rights which attach to high seas (Joyner 1991:228). Neither the Antarctic Treaty System nor the LOSC are specific in their definitions of ice, and further research is required into this subject area. This author suggests that the classification of ice can be determined from a number of points including its origin, location, composition (eg. salinity), stability/mobility and whether or not it is accorded the usual geological status of a mineral. Classification, for the purposes of exercising sovereignty over the resource, may also, by necessity, include a temporal dimension.

The overlap in jurisdiction between the Antarctic Treaty System and the LOSC may not be as controversial as it might appear. Article VI of the Antarctic Treaty states, in part, that

> ...nothing in the *present Treaty* shall prejudice or in any way affect the rights, or the exercise of the rights, of any state under international law with regard to the high seas within that area [south of 60° South]...

(emphasis added)

Therefore the Antarctic Treaty acknowledges the freedoms of the high seas. States which are parties to both the Treaty and LOSC must take account of any overlapping rights or obligations, but one instrument cannot be invoked to affect or justify a breach of an obligation under the other. For example, states now party to the Madrid Protocol have unilaterally undertaken not to conduct mineral resource activities in the Antarctic Treaty Area, although they may be permitted to do so under the LOSC. CRAMRA foresaw deep sea bed mining and made provisions for it in Article 5, however the general prohibition on mineral resource activities now overrides CRAMRA, even though the Madrid Protocol does not make explicit reference to the deep sea bed in its area of application.[347]

States outside the jurisdiction of the legal regimes of the Antarctic Treaty System would not consider there to be an overlap in any case, and thus the onus – in the case of any conflict – would be on the ATS to *prove* its status as an objective regime applying to third states.

With the LOSC in force, all states will be morally if not legally bound to coordinate protection of their common marine environment, as it will be difficult to ignore either their responsibilities or rights in this regard. In the Antarctic, the protection of the marine environment has been acknowledged by the Treaty Parties, who have included a dedicated annex to the Madrid Protocol (Annex IV) in their environmental regime. Annex IV is compatible both with Article VI of the Treaty (which protects the freedoms of the high seas) and the environmental principles in Part XII of the LOSC. The Arctic states are not as well endowed in this regard. The AEPS working group on

legal issues identified the fact that existing international law did not adequately deal with issues of marine pollution in the Arctic. Furthermore, it has been suggested that the LOSC '...has the potential to form the basis for a more integrated Arctic legal regime...'.[348]

The LOSC contains distinct advantages for Arctic littoral states because of the potential benefits associated with expanded territory. But these rights also attract corresponding responsibilities, not the least of which is environmental protection. Article 234 expressly states:

> Coastal States have the right to adopt and enforce *non-discriminatory* laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas *within the limits of the exclusive economic zone*, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.

(Article 234, emphasis added)

Article 234, which empowers states to make environmental laws for their territorial seas, has been said to vindicate Canada's unilateral action of 1970 – its Arctic Waters Pollution Prevention Act (Rothwell & Kaye 1994:48). As Article 234 only applies to the limits of the EEZ, Article 194.1 must also be invoked to protect the remaining high seas:

> States shall take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of *the marine environment from any source*, using for this purpose the best practicable means at their disposal and *in accordance with their capabilities*, and they *shall endeavour* to harmonize their policies in this connection.

(Article 194.1, emphasis added)

Unfortunately, although this Article applies to the whole marine environment, the language is hardly conducive to comprehensive environmental protection: *endeavouring* to harmonize policies is not the same as being directed to harmonize them; nor is the issue of capabilities sufficiently strict. (The same lack of legal imperative is found in Article 123 of Part IX regarding the cooperation of states bordering enclosed or semi-enclosed seas.) However, Article 235 on responsibility and liability is quite clear with regard to legal obligation:

> 1 States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment. They *shall be liable* in accordance with international law.

(Article 235.1, emphasis added)

In summary, the LOSC confers both rights and obligations on states with regard to the marine environment. Polar states are still to grapple with a range of problems and conflicts which may arise under this Convention, but the issues are not insurmountable.

5.4 Lessons of Experience

From the narrow parameters of the polar regions, it is now necessary to return to the global perspective. The study has indicated that the structural changes which will be required by states in order to adequately address ecosystem responsibility in the 21st century are enormous, requiring long-term strategies and substantial political and financial commitment. What lessons of experience are there in the polar scenarios?

Each case study represents a different stage of maturity of a regional ecosystem management regime. The Antarctic, for instance, is administered by the well-established, dynamic System which has been in operation for over 30 years now. Its custodial arrangement comprises a group of 42 disparate nations with varying interests in Antarctic affairs. Importantly, the regime has evolved in response to changing needs and is supported by a substantial amount of international law. CCAMLR's ecosystem approach to those fisheries in the Southern Ocean covered by the Convention has been operating for over 10 years, with varying degrees of success. Moreover, the acceptance of a comprehensive environmental protection strategy for the region is a compendium of existing and new laws negotiated over the 30 year life of Antarctic Treaty System. The Madrid Protocol indicates to the global community an acknowledgement of environmental concerns and a commitment to protection of the region. But this has only come about because of the existence of the Antarctic Treaty's Article IV, which suspends questions of sovereignty in favour of cooperation. Whether this same scenario could translate to other regions of the globe is debatable and may well be contingent upon a similar treatment of the traditional notions of sovereign autonomy.

In the Arctic, on the other hand, the process of developing a pan-Arctic management regime has only just begun. The eight sovereign Arctic nations have shown concern

about the state of their common environment and accordingly have established such cooperative initiatives as an International Arctic Science Committee and the Arctic Environmental Protection Strategy. The situation in the Arctic is a stimulating one to social scientists because the Arctic constitutes almost a microcosm of the discordant attributes common to many regions of the world:

- questions of sovereignty *v.* the common good;
- resource exploitation *v.* environmental preservation or conservation;
- the contribution of both developed and developing countries to the contamination of the environment;
- the region's value as a global resource (that is, by virtue of its importance to global climate processes);
- the rights of indigenous people and human rights in general.

In the Arctic, no Antarctic-like suspension of sovereignty was attempted and hence the states had to battle their way through the pre-existing characteristics of the independent Arctic state system. That they did manage a basic environmental accord is testament to their perseverance and their diplomatic talents. Any other region of the world in which sovereign states wish to formulate a cooperative eco-management strategy will most likely be faced with similar hurdles as those faced in the Arctic. With the political will to succeed and skilful negotiators, any region is capable of reaching such accord.

Can the UNCED prescription of a global partnership for sustainable development be applied to the polar regions? In the case of the Antarctic, this has been applied to a certain degree, simply because development as such has largely been suspended; resource harvesting in part of the Southern Ocean is managed by CCAMLR; and tourism and scientific programs are regulated by the Madrid Protocol. In the case of the Arctic, and as a model for other regions, the short answer is 'yes' providing that the states have the political will, as everything stems from the decisions made by them in their capacity as sovereign governments. Only they can choose to tighten regulations on transnational corporations; to make and enforce realistic regional and domestic environmental laws; to empower their local communities to begin a bottom-up process of environmental responsibility; and to give these communities the financial support and infrastructure to do the job. This study has shown that Antarctic states are more capable in this regard than the Arctic states because the Antarctic Treaty System is a proven mechanism which facilitates cooperation.

What other lessons can be learnt from the idiosyncratic polar management that can be applied to other geographical regions? One should be cautious about using the polar

case studies as analogies because of their peculiar features. However, each region of the globe is unique for one reason or another and this is not a factor which should be used as an excuse. States involved in the management of any so-called commons area, or indeed any region which requires multilateral management, are faced with the same kinds of problems, whether the subject concerns ice, or desert, or tropical rainforest.

The principal factor which allows states to make effective environmental law is their willingness to cooperate and the lengths to which they are prepared to bargain in order to achieve accord. The Antarctic Treaty states have a long history of cooperation, built on the firm foundation of the Antarctic Treaty. The Arctic states have not had the benefit of this kind of supporting infrastructure, yet they have still managed to begin a process which may well head in that general direction. The AEPS process, while slow and hard-fought, shows first and foremost the willingness of the Arctic states to cooperate through a bargaining process, until some general agreement emanates. Furthermore, outsiders who do not carry the burden of preconceived national prejudices cannot help but feel optimistic about the tenor of post Cold-War Arctic state relationships, although this optimism might prove to be premature.

This study suggested that the reshaping of international cooperation was a precursor to effective eco-management. Because both regimes have been able to successfully negotiate environmental accords, in a sense they have both complied with what this study thought acceptable behaviour might entail. The fact that the AEPS is non-binding does not detract from its value as a *framework* for a future ecosystem accord, and this is in keeping with current trends in international law. For that matter, the Madrid Protocol is not yet in force. However, some Antarctic states already acknowledge their obligations towards the Protocol's principles and objectives in the planning their scientific programmes, which is a positive sign.

As both regimes are underpinned by the sovereign integrity of the rim states in the case of the Arctic, and the claimant states and Consultative Parties in the Antarctic, can it be argued that a new international *environmental* order, as distinct from a new strategic or *political* order, is emerging? The information in this study seems to suggest that in the polar regions at least, this appears not to be the case. Concerns over the environment cannot be divorced from political issues. This is borne out in the demise of CRAMRA and the genesis of the Madrid Protocol to the Antarctic Treaty. Further, the study would seem to suggest that in the Arctic, the greater the ecological interdependence, the greater the struggle will be for states to retain their sovereign integrity. What holds true for the Arctic largely also holds true for other regions of the world.

5.5 Conclusions

This study has been a preliminary investigation into issues of polar ecosystem management. Neither the AEPS nor the Madrid Protocol presently have the full force of law behind them. It will be an interesting exercise to follow the progress of these two agreements over the next five years to see how they have developed in a world order demanding enhanced responsibility for the global ecosystem and a re-examination of the traditional minimalist approach to the coexistence of sovereign states in order to achieve comprehensive and effective environmental management. However, it is acknowledged that given the nature of international law, no environmental law or supporting organization is necessarily a benefit: the onus remains first and foremost with the states concerned.

The absolute bottom line is that global economic systems are totally underpinned by global ecosystems. At the moment, international policy- and law-makers still have choices about how they can balance environmental and developmental considerations. But if the right kinds of decisions are not taken now, it is surely not too fantastic to envisage a time in our future when those choices no longer exist.

END NOTES:

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1 This definition of *ecosystem* is that adopted by the Convention on Biological Diversity, signed in Rio de Janeiro on 05 June 1992, *reprinted in* 31 ILM 818 (1992). See Article 2, Use of Terms. Note that here and elsewhere the superiors [1] to [348] refer to the End Notes which begin on p.243. Note also that certain words throughout the text have been italicized for emphasis (with the exception of words and phrases of foreign origin) and direct quotations have been presented in a different font for ease of recognition.

2 This study has largely been based on the works of Carson (1962); Falk (1971); Caldwell (1972); Hardin (1972) and (1985); Passmore (1974); Myers (1993a); the United Nations (Conference on the Human Environment) (1972); the WCED (World Commission on Environment and Development) (1990); and the United Nations (Conference on Environment and Development) (1992).

3 This thesis was developed from the arguments by Andrew Hurrell and Benedict Kingsbury, "The International Politics of the Environment: An Introduction" in Hurrell & Kingsbury (1992), especially pp.1-6.

4 See Chapter 2 of this thesis.

5 These opinions can be found in Myers (1993a); Gleik (1993); Tuchman Mathews (1989); Ullman (1983); and Qing-Nan (1987).

6 Lewis (1992:3). Lewis presents a detailed critique of eco-radicalism in defence of Promethian (mainstream) environmentalism. For the opposite view, see Fox (1990).

7 See for example the accounts in Falk (1971); O'Riordan (1976); Hardin (1985); McCormick (1989); Nash (1990); Pearce (1991); and Lewis (1992).

8 For instance among others, Carroll (1988); Porter & Brown (1991); and Hurrell & Kingsbury (1992).

9 This phrase was from Myers (1993a:51) and refers to a situation '...where one factor is worsened by others, whereupon it supplies its own adverse impact in turn but with increased force.'

10 See Wall (1994:Ch.1) and McCormick (1989) in this regard.

11 Quoted in Hurrell & Kingsbury (1992) from UN Doc.A/CONF.151/PC/38 dated 26 March 1991.

12 This is from The Club of Earth statement, 1988, quoted in Ehrlich and Ehrlich (1990:18).

13 Ehrlich & Ehrlich (1990:9).

14 See for example Ehrlich & Ehrlich (1990:16-17); WCED (1990:74); and Hurrell & Kingsbury (1992) generally.

15 This figure is from Ehrlich & Ehrlich (1990:17), and does not accord with the calculations of Myers, who quotes a figure of at least 10 million environmental refugees, in line with latest estimates. Myers does suggest, however, that his figure is certainly on the low side and he envisages that, in a greenhouse-affected world, there may be as many as 150 million people who 'can no longer gain a secure livelihood in their homelands...'.Myers (1993a:190-1) See also Switzer (1994:Ch.18).

16 WCED (1990:Ch.4) generally.

17 Synergistic stress is the phenomenon of synergism which arises when '...two or more environmental processes interact in such a manner that the joint product of their interactions is not merely additive but multiplicative; that is, their impacts operate in a mutually amplifying fashion' (Myers 1993a:205). For a fuller explanation of synergism, see also Myers (1993b).

18 Ehrlich and Ehrlich (1990:27). Myers (1993a) gives some examples of primary resources which have been rendered unusable, or dangerous to human health. These include water in the Middle East (Ch.3) and the Indian Subcontinent (Ch.7); and land in Ethiopia (Ch.4), Sub-Saharan Africa (Ch.5), Mexico (Ch.9) and the Philippines (Ch.6). For the affects of acid rain on tropical forests in southern China and elsewhere, see Myers (1993a:206-7). See also UN International Tropical Timber Agreement, done in Geneva on 26 January 1994, *reprinted in* 33 ILM 1014 (1994) as an example of one response to this situation.

19 Professor Stephen Schneider, ABC Radio National 27.3.94.

20 See for example the work of Lunde (1992); Benedick (1991); and the articles in Choucri (1993).

21 For one account of the possible effects of global warming and a discussion on the temperature rise figures see Woodwell (1990). These figures are also reported in WMO/UNEP (1992:4).

22 For an interesting treatment of the ozone backlash, see Taubes (1993).

23 The law concerned is the Vienna Convention for the Protection of the Ozone Layer, adopted in Vienna on 22 March 1985 and entered into force on 22 September 1988. It has subsequently been revised several times, the first being the Montreal Protocol on Substances that Deplete the Ozone Layer, which was adopted in Montreal on 16 September 1987 and entered into force in August 1992. At the second meeting of the Parties to the Montreal Protocol in London in June 1990, an Interim Multilateral Fund (IMF) was established to help developing countries comply with a new agreement - the London Amendment. The IMF is jointly administered by the UN Environment Program, the UN Development Program and the World Bank. At the fourth Meeting of the Parties in Copenhagen late in 1992, representatives from 74 states and the EC agreed to a complete phase-out of CFCs and carbon tetrachloride by January 1996 (UNEP 1991).

24 Porter & Brown (1991:7-8); Ehrlich & Ehrlich (1990:123-4).

25 LRTAP, concluded 13 November 1979, entered into force 16 March 1983; Protocol to the 1979 LRTAP Convention on Further Reductions of Sulphur Emissions done in Oslo on 14 June 1994, *reprinted in* 33 ILM 1540 (1994). See Bowman & Harris (1984). All Arctic states are parties to this Convention (See Appendix 4).

26 For further discussion see Myers (1993a:Ch.12).

27 See Endnote 1 above.

28 Article 1 of the Biodiversity Convention reads:
The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

29 For example see, among others, the International Convention for the Regulation of Whaling 1946, *reprinted in* 161 UNTS 72; the Convention on International Trade in Endangered Species of Wild Flora and Fauna 1973, *reprinted in* 12 ILM 1085; the Bonn Convention on the Conservation of Migratory Species of Wild Animals 1979, *reprinted in* 19 ILM 15 (1980); the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971, *reprinted in* 11 ILM 963 (1972); and the Convention for the Protection of the World Cultural and Natural Heritage 1972, *reprinted in* 11 ILM 1358 (1972)

30 For an overview of this debate see Hurrell (1992). On a similar theme, the forests of the Philippines, see Myers (1993a:Ch.6).

31 Quoted in Brown (1992:96-7), emphasis added.

32 Montevideo Convention on Rights and Duties of States, Article 1, (1936) *reprinted in* 135 LNTS 19. See also Levine (1992:3) and Brownlie (1990:72-8). Brownlie stresses that these four criteria - territory, population, government and independence - are not peremptory and form nothing more than a basis upon which to begin assessing the legal status of an assertion of statehood.(Brownlie 1990:72) There are, for instance, sub-groups of the fully sovereign state like dependent states, internationalized territory, condominia and non-self-governing territories, which do not meet all the requisite criteria of the Montivideo Convention because they have characteristics requiring unique definitional treatment. For further discussion refer to Brownlie (1990:Ch.3) and Hannum (1990:Ch.2).

33 For further information on the historical development of sovereignty see James (1986) and Morgenthau (1973).

34 Articles 27 and 46, Vienna Convention on the Law of Treaties.

35 UN Charter Article 2. See also Brownlie (1990:287).

36 See Porter and Brown (1991:Ch.1).

37 Dixon & McCorquodale (1991:130). It is appropriate at this point to make the distinction between the terms 'state' and 'nation' in the context of this study. *State*, as noted above, denotes - in a physical sense - territory, people and government, and the concept of independence. *Nation*, on the other hand, denotes a particular group of people which considers itself a community by virtue of a sense of common identity (Hannum 1990:Ch.2; Brown 1992:5). The difference is that states can comprise more than one nation (eg. Canada, Spain) and similarly nationalities may range over several states (eg. the Sámi, Jews, Romanies). Therefore, in this study the terms state and nation are *not* used interchangeably, but in fact refer to two quite distinct entities.

38 UN Charter Article 4 reads:
1. Membership of the United Nations is open to all other peace-loving states which accept the obligations contained in the present Charter and,

in the judgment of the Organization, are able and willing to carry out these obligations.

2. The admission of any such state to membership of the United Nations will be effected by a decision of the General Assembly upon the recommendation of the Security Council.

39 See particularly e Silva in Dupuy (1985:217-31) and McCormick (1989:Ch.5).

40 *Reprinted in* 11 ILM 1416 (1972).

41 Sand in Dupuy (1985:52) and Caldwell (1984:19-34).

42 UNEP (1981); UNEP/GC.10/5/Add.2, Annex, Ch.II:1981.

43 'CITES', 1973, *reprinted in* 12 ILM 1085.

44 'Basel Convention', 1989, *reprinted in* 28 ILM 649.

45 This was no doubt a popular phrase, being regurgitated by Sand in Dupuy (1985:52); Palmer (1992:260); and Plant in Churchill & Freestone (1991:167).

46 Reprinted in UNEP (1981).

47 The concept of the common heritage of mankind is discussed below at p.48.

48 This was restated in UN Res.45/53.

49 Birnie (1991:2-3). This is further discussed below at p.39.

50 These included four preparatory meetings: PrepCom 1 Nairobi, August 1990; PrepComs 2 and 3 Geneva, March and August 1991; and PrepCom 4 New York, March 1992. There was also an Eminent Persons' Meeting on Financing Environment and Development, Tokyo, April 1992; ministerial conferences of developing countries; International Monetary Fund and World Bank Development Committee meetings; Global Environment Facility participants meetings; OECD and European Community Environment and Development Ministers meetings; Intergovernmental Meetings for the framework conventions on climate change and biodiversity; and national seminars in many countries to formulate both government and NGO input (Environment Institute of Australia, Special Issue, November 1992).

51 See the works of Knecht & Cicin-Sain (1993:75); Choucri & North (1993:482); and the United Nations (1992:Ch.8).

52 Agenda 21 was divided into Section I - Social and Economic Dimensions: International cooperation, combating poverty, consumption, population, health, human settlements, integrating environment and development in decision-making; Section II - Conservation and Management of Resources: Atmosphere, land resources, deforestation, desertification and drought, mountain ecosystems, sustainable agriculture, biological diversity, biotechnology, oceans, fresh water, toxic chemicals, hazardous wastes, solid wastes, radioactive wastes; Section III - Role of Major Groups: Women, youth, indigenous people, NGOs, local authorities, trade unions, business and industry, scientific community, farmers; and Section IV - Means of Implementation: Financial resources, technology transfer, science for sustainable development, education, public awareness and training, capacity-building, institutional arrangements, legal instruments, information for decision-making.

53 Rio Declaration on Environment and Development *reprinted in* 31 ILM 874 (1992); Framework Climate Change Convention *reprinted in* 31 ILM 849 (1992).

54 The Instrument Establishing the Global Environment Facility, done in Geneva on 16 March 1994, *reprinted in* 33 ILM 1273 (1994). See also United Nations (1992:Ch.33). For a discussion of the GEF's role in the Biodiversity Convention, see Putterman (1994).

55 NGOs from diverse backgrounds held a concurrent assembly in Rio, called the Global Forum, and produced their own set of documents or *treaties* as they were called. (These documents are cited as 'Anon. "Global Forum Documents" (1992) "Alternative Treaties" ' in the Bibliography because the authors are unknown.) In addition, newspapers like the *Earth Summit Times*, *Jornal do Brasil* and *Terra Viva* held court daily over the official process and its progress. Together the alternative treaties and the newspapers provide useful sources of information on, and balance to, the official reports and negotiating positions of the participating countries and organizations.

56 For a generic coverage of the post World War II status of the world, see the works of Morgenthau (1973); Anell & Nygren (1980); Larschan & Brennan (1982); and Brown (1992).

57 See note 52 above.

58 For some discussion of the concept of a new world order see Chomsky (1991) and Evans (1991).

59 On this issue in general terms, see Underdal (1989). On the subject of polar science in particular, see Elzinga and Bohlin (1989).

60 This was the precursor to the 1972 United Nations Conference on the Human Environment (the Stockholm Conference) described earlier.

61 For further information on this Conference see McCormick (1989:89).

62 WMO Report #661, 1986:32, quoted in Lunde (1992:75).

63 For a discussion on the complexities of climate modelling techniques see Schneider (1990).

64 This Convention eventually evolved through the UNCED negotiating process; the Framework Convention on Climate Change came into effect on 21 March 1994. See note 53 above.

65 It has also been suggested, however, that the process lacked legitimacy. It was intended that IPCC reports be peer-reviewed but this was not always adhered to, thereby inferring that the process was not taking full account of the best scientific advice available (Arking, pers.comm). For further criticism of the IPCC process see *World Climate Review* **3** #1 Fall 1994, 'Reviewing the Consensus: Two prominent scientists review IPCC report', pp.10-13.

66 Although officially the substance of this report is not known at this stage, it is envisaged that little has changed since the 1992 assessment (Budd, pers.comm.).

67 For an interesting expose on this issue see Martin (1979).

68 This subject is explored by Yearley (1991).

69 The historical works of authors such as Passmore (1974); O'Riordan (1976); Ponting (1991); Nash (1990); and Wall (1994), among others, trace the history of environmentalism to modern times.

70 As a direct result of the publication of Silent Spring, a US Presidential advisory panel on pesticides was convened (McCormick 1989:47).

71 See for example the descriptions by Aiken in Regan (1984:255); McCormick (1989:56); and Nash (1990:79-82).

72 See Ponting (1991:Ch.16) and Wall (1994). The theory that the Earth works as a single, self-sustaining unit was one banner of this early green movement. Gæa (or Gaia) is an hypothesis which posits that the planet reacts to any form of atmospheric change to restore the best balance for life via sophisticated global feedback mechanisms. From Lovelock, quoted in Wall (1994:78). See also Caldwell (1990:53-4).

73 McCormick (1989:48). McCormick noted six factors which particularly motivated the new environmentalism of the 1960s: i) the 1950s was a period of rapid and sustained economic growth and affluence, with concurrent social and political changes; ii) the fallout from atmospheric nuclear testing became an issue because the public began to realise how little was known about its potential danger. There was a direct political conflict, in the United States for example, between acknowledging public concerns about nuclear testing and the officially-perceived defence priorities of the Cold War; iii) Silent Spring. Carson's ability to reach the public intelligence level with an essentially technical matter and the moral and ethical stand she took contributed, in McCormick's view, to her enduring success; iv) the wreck of the *Torrey Canyon* off the English coast in 1967 heightened alarm about oil spills. It was to be one of thousands of accidental contaminations to occur during that period. Death and disfigurement from Minamata Disease - mercury poisoning from fish caught in Minamata Bay in Japan - stimulated concerned groups to look at their neighbourhood waterways for signs of eutrophication and contamination; v) environmentalists began to realise that they needed scientific substantiation to enhance their claims and new ecological research projects were undertaken. The 1957-58 International Geophysical Year (covered further in the Antarctic case material) was the beginning of an effort to internationalize scientific research. It was followed by many benchmark conferences during the 1970s and 1980s, some of which are also described in this thesis; and vi) poverty, racism, anti-war and other civil rights movements occurred in parallel and played the role of informing the environmentalists about the utility of mass action protests. (McCormick 1989:61-4)

74 For an expanded discussion of this phenomena, see McCormick (1989:Ch4) generally.

75 Created by ex Sierra Club executive, David Brower, in 1969, FoE was far more activist and representative of the new environmentalism than the conservationist Sierra Club. See McCormick (1989:143-4) and Pearce (1991:Ch.3). Greenpeace, the most well known direct action environmental group, sprung from the Canadian Don't Make a Wave Committee. This was a group concerned that a planned nuclear test on Amchitka Island might cause an earthquake to shatter North America and a resulting tsunami to flood its shores. Apparently this group formed Greenpeace in 1971. The group's early executive was comprised of ex-Sierra Club members and pacifist Quakers, among others. Accordingly they reformed the old Quaker protest doctrine of *bearing personal witness* into an entreaty to the *world* to bear witness to ecological degradation (Pearce 1991:19).

76 Governments of both the Netherlands and Norway have fallen in parliamentary elections because of lack of concern over environmental issues; on the other hand, governments have also been elected or re-elected *despite* unpopular environmental values. See Caldwell (1990:Ch.5) generally.

77 Brown (1992) developed these concepts from his earlier work for the Brookings Institution study on international commons regimes of 1976. Although the context of his discussion was international commons, such stages no doubt also occur with respect to many other examples involving shared ecological concern. See also Brown et al (1977).

78 OECD 'Guiding Principles Concerning International Economic Aspects of Environmental Policies', Recommendation C(72)128, adopted 26 May 1972, *reprinted in* 11 ILM 1172 (1972).

79 Trail Smelter Arbitration (US v Canada) (1941) 3 RIAA 1905.

80 Document COM(91) 219 Final - SYN217, Brussels, 27 June 1991.

81 Ambiguity has largely issued from the use of the term 'needs'. See the discussions in Harden Jones (1994:148-9); IUCN/UNEP/WWF (1990:10-11); and IUCN/UNEP/WWF (1991:10).

82 Quoted in Thacher (1992:190); sourced from Annex II to UNEP Governing Council decision 15/2, May 1989. Thacher comments that: 'The sensitivity of sovereign states in relation to the need for freely exchanged environmental information and steps to guard against extraterritorial environmental impacts has been clear since the negotiation of the 1972 Stockholm Declaration of Principles.'

83 UN Doc. A/6695 (1967).

84 In Weiss (1989:48-9), emphasis added. See also Joyner (1986:194); Larschan & Brennan (1982:319); and Zou (1991:174).

85 It was possible to bring into force the Law of the Sea Convention only after states had spent four years negotiating an amending agreement to it. The 'Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982' (hereinafter 'Agreement') and its annex are recognized as integral to LOSC and override any part of the original Part XI in the event of any inconsistency.(United Nations 1994 'Agreement' Article 2) The 'Agreement', done in New York on 28 July 1994, is *reprinted in* 33 ILM 1309 (1994).

86 The original Part XI of LOSC dealt with deep sea bed mining, to which the common heritage of mankind concept was most appropriately applied. However, a view has been expressed that the Agreement modifies the common heritage concept contained in the 1982 Convention (Mensah 1994). It is difficult to see how this can be so, since Article 311.6 of Part XVII of LOSC expressly forbids States party to the LOSC from being a party to any agreement which amends the basic principle relating to common heritage pursuant to Article 136. Even though the new Agreement overrides the original Part XI, the obligation to not amend the common heritage concept is contained elsewhere in LOSC.

87 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (1967) *reprinted in* 610 UNTS 205 (1967), Article I.

88 United Nations Agreement Governing the Activities of States on the Moon and other Celestial Bodies (1979) UN Doc.A/34/664, Article 11; done on 5 December 1979, *reprinted in* 18 ILM 1434 (1979). This Agreement is not yet in force.

89 Global commons are areas beyond national jurisdiction which are *terra nullius*, owned by no-one and therefore capable of appropriation, or *terra communis*, owned by everyone and over which 'no single decision-making unit holds exclusive title' (Wijkman 1982:512-13).

90 For a recent case in which this concept arose, see The Philippines : Supreme Court Decision in Minors Oposa v. Secretary, Department of Environment and Natural Resources (DENR) (Deforestation; Environmental Damage; Intergenerational Equity) 30 June 1993, *reprinted in* 33 ILM 173 (1994).

91 Approved by the UN General Assembly on 10 December 1948.

92 For a comprehensive list of international instruments see Weiss (1989:25) or (1993:338-9).

93 Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (1991)*reprinted in* 30 ILM 773 (1991).

94 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) done in Canberra on 20 May 1980, entered into force 7 April 1982, *reprinted in* 19 ILM 827 (1980). CCAMLR, Article II.3 reads:

Any harvesting and associated activities in the area to which this Convention applies shall be conducted in accordance with the provisions of this Convention and with the following principles of conservation:

(a) prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment. For this

purpose its size should not be allowed to fall below a level close to that which ensures the greatest net annual increment;

(b) maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to the levels defined in sub-paragraph (a) above; and

(c) prevention of changes or minimization of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effects of environmental changes, with the aim of making possible the sustained conservation of Antarctic marine living resources.

There is a well-argued case to support the contrary view that Article 3(a) and (b) only make sense if management decisions are to be based on quantitative data (Harden Jones pers.comm.).

95 For instance, neither of the above definitions elaborate on the *legal* nature of a regime or its rules. List and Rittberger have found a solution to this so-called omission. They observe that a regime itself cannot attract legal personality. Rather this is achieved through the creation of an organization with that specific functional role within the regime it is attached to (List & Rittberger 1992:90). List & Rittberger adopt the latter definition of Krasner's and retain his four normative elements of principles, norms, rules and procedures. However, as a means of distinguishing between a regime as a social institution and a regime as a treaty with attached legal rights and obligations, they include another criterion: the observation of norm- and rule-guided behaviour (List & Rittberger 1992:90).

96 Spontaneous regimes may also be what Dolman terms: 'abstract which, like the "hidden hand" and legal precedent, are no less powerful even though they lack a physical presence' (Dolman 1981:160).

97 For example, the structure of a regime to foster trade between two countries will obviously be quite different from one intended to regulate the scaling-down of their nuclear arms capabilities. This in no way reflects the importance of the problem, *per se*, but rather indicates that a different approach is necessary because of the requirements dictated by an envisaged or agreed pathway towards the solution.

98 Consider here too, systems theory, which is said to contain two essential elements. The first is that interconnections exist within a system, so that changes to some parts will induce changes to other parts as well. This is analogous to interdependency. The second element relates to collective behaviour: 'the collective behaviour of the system as a whole differs from the expectations and priorities of the individual units that make it up' (Gaddis 1987:218). The logic of this argument would seem to be that the behaviour of states as individuals in the negotiating process of regime formation may be different to the behaviour of states as a collective part of an established regime. Further, the stability (an element of *success*) of the regime may be greater than the sum of the stability (or instability) of its constituent states. To illustrate this point, consider that the British and Argentinian representatives sat at the same table for an Antarctic Treaty Meeting during the Falkland Islands war. Similarly, the United States and Soviet representatives were active participants in Treaty meetings during the Cold War, without any apparent or overt effects on the functioning of the Antarctic Treaty System.

99 See for example the comments of Krasner (1982:190); and the works of Strange (1982) and Spanier (1992).

100 There is ample discussion in the Arctic case study, presented here as Chapter 4, on the nature of transboundary problems and their likely effects across the Arctic.

101 The unpublished PhD Thesis 'The Polar Regions and Development of International Law' by Donald R Rothwell, Faculty of Law, University of Sydney, 1994, is one recently completed study in this field.

102 The reference to the Antarctic is contained in Agenda 21, Chapter 17, at point 105. It urges states carrying out research activities in the region to continue to share that information with the international community.

103 See for example the work of Beck (1989b); Franckx (1992); Champ et al (1992); and Rothwell (1994b).

104 The Antarctic Convergence is described and its approximate coordinates given in the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) Articles I.1 and I.4. This and the following physical descriptions are from Walton (1987).

105 The Antarctic's isolation is a major contributing factor to its near-pristine environment which thus enhances its role in scientific research.

106 The southern reaches of the South Pacific, South Atlantic and Indian Oceans, which meld into the circum-Antarctic water mass are known collectively as the Southern Ocean.

107 The South Orkneys and South Shetland Islands (UK) are the best known of the Antarctic islands south of 60° South. Other well-known landforms such as Macquarie, Heard and McDonald Islands (Australia), Campbell Islands and Auckland Island (New Zealand) and Iles Crozet and Kerguelen (France) are sub-Antarctic, that is, north of 60° South.

108 That is, the *permanent* ice-shelves, the largest of which are the Ross and the Ronne.

109 For example, in reference to the marine ecosystem and the Antarctic Convergence. It is possible to put an exact location on the Antarctic Convergence only at a particular point in time because it is a dynamic biogeographic area.

110 Some direct quotes cited in this text use the term Antarctica to refer to the whole of the region (which I have referred to as 'the Antarctic'). For the sake of authenticity, these quotes have not been altered.

111 Approximately 10% of the surface of the earth is covered by ice, and about 89% of this is found in the Antarctic, both continental and marine.

112 A record low of -89.6°C was registered at Russia's *Vostok Station* in the Australian Antarctic Territory in 1983.

113 This is a moot point since many countries do not recognise any of these partitioned claims.

114 Ice cores extracted by drilling through the ice cap have revealed the sequential layering of ice over hundreds of thousands of years. Analysis of the ice, of the impurities in it and of air trapped in minute bubbles within its crystalline structure, have enabled records to be made of environmental changes over this time. This is one of the essential sciences carried out in the Antarctic which helps put together the big puzzle of world climate variability.

115 Note that the polar Circles are 23°28' from the poles, representing a distance of about 2,600 km.

116 For example, the Canadian Government uses both 'north of 60° North' and the 'southern limit of permafrost' to determine the physical operational area of its Department of Indian Affairs and Northern Development. (G.Bangay, pers.comm.)

117 This is particularly so in relation to the operation of submarines, and poses substantial risks of accidents, despite also being, in a strategic sense, 'favourable...for nuclear-powered submarines carrying sea-launched ballistic missiles...' (Young 1992:175).

118 Whether ice should be treated as a separate entity in the legal regime of the Arctic is an unresolved issue, as ice has not been dealt with adequately in international law to date. See LOSC Article 234; Joyner (1991); and Machowski (1992). See also further discussion in Chapter 5 of this study.

119 The term 'geopolitics' can be found in late 19th century literature where it was used to describe 'the science that conceives the state not as an inanimate body, but as a geographical organism or as a phenomenon in space...states compete with one another for scarce space, and the laws of natural selection, which favour the most biologically fit, apply equally to nations as to species.' Its more modern usage draws the connection between state security and environmental degradation.(Switzer 1994:357-8)

120 The publication by the University of Alaska - the Proceedings of an International Conference on the Role of the Polar Regions in Global Change, Vols. I and II (1990), is particularly useful for demonstrating the range of scientific disciplines involved and the varying opinions available at that time regarding this issue. See for example the contributions by Waddhams pp.4-12; Parkinson pp.17-21; Belchansky and Pichugin pp.47-57; Lorius pp.570-575; Hogan, et al pp.681-686; and Borisenkov pp.687-692 in University of Alaska (1990).

121 That is, the land between 90° and 150° West. For a description of the claims, see Appendix 1.

122 Magellan did not survive the voyage; he was killed in the Philippines.

123 Reader's Digest (1985) provides accurate and enjoyable reading. For further information on the Antarctic's diverse history, see also the works of Swan (1961); Bush (1982); Quigg (1983); Walton (1987) and Joyner (1992).

124 See for example Plott (1969) and Burke (1994).

125 Quoted in Quigg (1983:29).

126 This sector corresponded with what is now Ellsworth Land and the top third of Marie Byrd Land.

127 Queen Maud Land is also known as Dronning Maud Land.

128 The previously lauded scientific work of the Germans was being damaged by their unpopular expansionist policies in Europe.

129 This is an interesting yet largely ignored controversy which deserves further investigation. The basic documentation in Bush (1982) Vol. I - III reproduces the diplomatic correspondence between the governments of Britain, France and Australia. Further, though limited, comment can be found in Swan (1961); Lovering and Prescott (1979); and Beck (1986b), among others.

130 See Appendix 1 for coordinates of claims.

131 The manager of the Compãnia Argentina de Pesca SA was the Norwegian C A Larsen, and the manager of the Chilean Sociedad Bellernera de Magallanes was another Norwegian, A A Andresen.

132 See for example the works of Grattan (1963); Tonnessen & Johnsen (1982); and Hall (1986) and (1994).

133 The most successful attempt to regulate Antarctic marine living resources is CCAMLR, which will be discussed further in Chapter 3.

134 This assumes that the relationship between whales and their food sources like plankton and krill can be considered 'predatory'.

135 The 'Special' in SCAR was later changed to 'Scientific'.

136 It could also be argued, of course, that their cooperative participation in the IGY was symptomatic of the Cold War brinkmanship between them and did not in fact represent anything quite as noble as the reprioritization of science over politics.

137 *Reprinted in* 2 RIAA 829 (1928).

138 *Reprinted in* 26 AJIL 390 (1932).

139 *Reprinted in* PCIJ SerA/B, #53 (1933).

140 For a comprehensive discussion of these three cases see Dixon & McCorquodale (1991) pages 239, 233 and 232 respectively.

141 The Argentinian name for the Falkland Islands is the Malvinas.

142 Refer to the International Court of Justice Pleadings, *Antarctic Cases* (*United Kingdom v. Argentina : United Kingdom v. Chile*) Orders of March 16, 1956: Removal From the List. For further discussion see Hall (1994:100-101).

143 The Rio Treaty, signed in Rio de Janeiro 02 September 1947, *reprinted in* Grenville (1974).

144 This does not include the attempts by Britain at judicial arbitration on the overlapping Peninsula claims (see note 142 above). Had a settlement been reached, it would have accounted for only part of the problem in any case. For a useful historical analysis of why a regime did not materialise at this time see Peterson (1988), especially Chapter 4, in which she discusses why Antarctica had a low political salience and the nature of differing national priorities leading to coalitions which effectively blocked constructive negotiation.

145 Beck (1986b:40). On this matter see also Hall (1994:77-8) and Plott (1969) generally.

146 Hall (1994:79-80). See also p.102 re Franz Josef Land.

147 Informal negotiations were temporarily diverted when, early in 1956, India raised the issue of the Antarctic as a possible item for inclusion on the Agenda of the 11th UN General Assembly. The Indian request was later withdrawn prior to the UNGA due to lack of support (Hall 1994:122).

148 Hitchins and Liander (1990:297-316). They cite Østreng at p.312, in the context of the linkage between the military and scientific fields. Østreng notes that the hegemonic competition made few or no distinctions between the two areas. This is no doubt also true of cooperation over environmental matters, especially in the sense that sovereignty was closely guarded during the Cold War.

149 Evidence of the earlier existence of regionalism can be found in the number of bilateral accords between the Arctic states. See Appendix 5.

150 'Internal Waters' are as described by the LOSC, Article 8.

151 See Rothwell (1994a:4-5).

152 For the facts of this case, see p.45 above.

153 Stokke & Castberg (1993:21) quote from the work of Waever & Joenniemi (1992). Stokke & Castberg's article describes the regionalization in the Barents Sea area, in which they suggest that the Barents region would form a hybrid of the trans- and inter-state spheres of cooperation. It is this author's suggestion that regionalism occurs at the intra-state level as well, as the Sámi homelands in the north of each Nordic country are being treated as politically different, especially by the Sámi themselves. The existence of the Sámi Parliament confirms this thought; so too does the suggestion that the Sámi homelands should become an autonomous trading region in the EU (Helander, pers.comm.).

154 CARC (1988:5). There is a large amount of information on the development of the northern Canadian territory and its segmentation into autonomous regional political areas. See for instance Bekale (1990) and Dickerson (1992).

155 In this sense, 'Arctic' is used in the context of the wider geographic location, as described on p.70.

156 The interests of states like Japan and South Korea outside the 'Arctic' *per se* are not dealt with in this work, except in the cases where they have directly participated in the regime negotiation process. Their legitimacy as stakeholders (in the sense that they are involved in economic exploitation and hence decisions taken will have an effect on them) is confirmed by Friedheim (1988:494).

157 Government of the United States (1992a:5). See also Government of Canada (1980).

158 Government of Canada (1980) and (1990). For a description of the Sector Principle see p.108.

159 This study does not attempt to analyse the implications of the situation with regard to the other former members of the Soviet Union, as Russia is the only 'Arctic' republic. Russia's recent incursions into the Muslim republic of Chechnya to dampen the separatist rebellion there, and international criticism of Boris Yeltsin's leadership, makes casual analysis of the tenuous situation in the former Soviet republics premature and unwise.

160 The cumbersome title of Greenland/Denmark will not be used in this study, however Denmark's role in Greenlandic foreign affairs is implicit. This study acknowledges the special status of Greenland and its inclusion in the 'Arctic 8' is meant to imply nothing more than the kind of quasi-independence which is accorded to Greenland by the international community in the context of the Arctic affairs studied in this thesis.

161 Norway, Greenland and the Faroe Islands are also members of this break-away body.

162 Sugden (1982) devotes Chapter 8 to a discussion of the evolution, population and settlement of the Arctic. His work is particularly useful for descriptions of the Ice Age cultures like the Arctic Small Tool and Thule Traditions. For a more recent discussion of this topic, which argues against the view that Palaeo-Eskimo cultures of the eastern Arctic derive directly from the Alaskan Small Tool Tradition, see Stewart (1989).

163 Beringia was the intermittent bridge across the Bering Strait linking Asia and North America.

164 There were Danish Vikings (the Great Army), Norwegian Vikings and Swedish Vikings.

165 Note that the climate at this time was several degrees warmer than it is today (Sugden 1982:Ch7).

166 The following accounts draw heavily on the work of Baird (1964:Ch.2) and Kinder and Hilgemann Vol. I and II (1978) unless otherwise indicated.

167 This is also known as the Northern Sea Route, although there are subtle differences between the two.

168 Sollie (1989:16). For a history of the Northern Sea Route see also Armstrong (1992).

169 Russia's big rivers play an extremely prominent role today in the transportation of pollutants from the industrial areas and military sites into the Arctic Ocean.

170 Incidentally, it has been said that Tsar Peter I was greatly influenced by French and German scientific thought and established the Academy of Sciences in the capital, St Petersburg, in 1725 (Armstrong 1992:35).

171 The United States purchased Alaska from the Russians in 1867.

172 In fact it is notable that the names of many Arctic explorers like Cook, Davis, Ross, Byrd, Nordenskiöld and Amundsen, crop up in Antarctic history as well. These were truly *polar* explorers.

173 His nephew, James Clark Ross, gained valuable Arctic experience with his uncle and later was prominent in Antarctic exploration.

174 Nobile's second attempt on the pole in 1928 met with disaster when his airship was forced to land on the ice. Amundsen set out by air from Tromso to find him but his party never returned. Nobile's expedition was eventually rescued by a Russian ice-breaker, the *Krasin*.

175 This principle of contiguity affirms that coastal states have rights to adjacent marine territory, and in the case of a state claiming territorial possession of islands, those islands too have contiguous belts of sea. See Brownlie (1990:Ch.9) generally.

176 Named after US President Truman, the Truman Doctrine was an appeal for international resistance to communist aggression, with a guarantee of American aid to any free nation which resisted communist propaganda or sabotage.

177 The Marshall Plan was an extension of the Truman Doctrine, proposing that the war-damaged nations of Europe join a program of mutual aid for economic recovery. The administration

body, Organization for European Economic Cooperation (OEEC) was the forerunner of the present-day OECD.

178 The term 'cold war' is thought to have originated during the 1930s to describe Nazi Germany's propensity for conquering other states with little fighting.

179 NATO was signed on 4 April 1949 by Belgium, Canada, Denmark, France, Great Britain, Iceland, Italy, Luxembourg, The Netherlands, Norway, Portugal and the United States. Greece and Turkey signed in 1951 and West Germany in 1954.

180 The communist states of Eastern Europe, under unified military command, included alongside Russia, Albania (withdrew 1968), Bulgaria, Czechoslovakia, East Germany, Hungary, Poland and Romania. China did not sign the Pact but rather, pledged its *support* for Warsaw Pact countries.

181 This short-hand history is drawn from Kinder and Hilgemann (1978 Vol. II) and SBS (1994).

182 The northern part of Schleswig voted in favour of a return to Danish sovereignty in 1920.

183 The political history of the Svalbard Islands (called Spitzbergen till 1925) is vaguely analogous to the Antarctic in the sense that Svalbard was considered *terra nullius* and *terra communis*. The international regime established by the 1920 Svalbard Treaty demonstrates how an area of vital strategic, economic and aesthetic interest can be managed appropriately. The Treaty gave Norway sovereignty over Svalbard; the islands are administered by a Governor; and Norwegian criminal and civil law, and legislation for the administration of justice, prevail. The Mining Ordinance permits any private person or company from a country which has signed the Treaty to prospect for minerals. In this sense any mineral reserves are indeed international, and for example, Svalbard's extensive coal reserves are being exploited by both Norway and Russia (which is also a Party to the Svalbard Treaty). Importantly, more than half of Svalbard consists of protected areas with strict environmental controls and tourism regulations (Government of Norway 1990, 1993). For a comprehensive overview of Norway's principles and objectives with regard to Svalbard see the Royal Ministry of Justice Report #40 to the Norwegian Storting Concerning Svalbard (1985-86, unofficial translation). Leonid Timchenko's (1992) critique of the book *Politics in High latitudes: The Svalbard Archipelago* by Willy Østreng gives an interesting, although brief, insight into the Russian version of Svalbard's history.

184 See, for example, Geddie (1882); Seton-Watson (1967); Almedingen (1971); and Dmytryshyn (1974).

185 The city of Mirny in the province of Sakha (formerly Yakutia), for example, produces nearly 99% of Russia's diamonds. This represents nearly 25% of total global diamond production.

186 See Brigham (1991) for an examination of the Soviet use of the maritime Arctic.

187 The Regulations, which entered into force on 1 July 1991, are reprinted in translated form in *International Challenges* **12** #1 (1992) pp121-6 by the Government of the USSR, Ministry of Defence.

188 For a comprehensive coverage of the Northern Sea Route issue, see *International Challenges* **12** #1 1992 Special Issue, and Timchenko (1994).

189 This was reported in the Hobart daily newspaper, The *Mercury*, 7.1.94, p.13.

190 The former USSR did make a formal declaration of a national sector in 1926. For information regarding this see Joyner (1992) at pp.56-58 and pp.72-73.

191 The US, Canada, Russia, Greenland, Norway, and Iceland.

192 For example, the related Alaskan and Siberian Inuit, although separated by only a 50 mile stretch of water, are subject to the laws of two different states and were prohibited visiting rights until recently. They may be considered 'straddling cultures', analogous to 'straddling fish stocks'.

193 For example, 64% of the Canadian North West Territory labour force were not born in the NWT (Allen 1990:31).

194 This can occur when traditional grazing grounds are declared national parks with attached limited rights for the Sámi reindeer herders. It has also occurred as a result of the contamination from the Chernobyl fallout.

195 See p.161.

196 The Canadian James Bay Project, Great Whale River component, is a case in point. Not only are the indigenous people at odds with both the Quebec and Federal governments, but this is also one instance in which there is a conflict of values between indigenous groups themselves – the Inuit and the Cree First Nation tribe. For the Cree perspective, see Diamond (1990); for a general overview of the James Bay Project see Switzer (1994:328-9).

197 The Inuit Homelands include the Canadian regions of the North West Territories, the District of Franklin, northern Quebec and Newfoundland and the coastal regions of Hudson Bay. For further information see map titled "Indian and Inuit Communities and Languages" (ref.

MCR4001) The National Atlas of Canada produced by the Department of Energy, Mines and Resources, Ottawa.

198 Brantenberg (1991:78). See also Nystø (1990).

199 Article 27 says that in those states in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practise their own religion, or to use their own language (Smith 1990:123). For comment on the relevance of the UN Covenant on Civil and Political Rights to the Sámi, see Smith (1990) and Sillanpää (1990).

200 The Canadian indigenous group, Assembly of First Nations (formerly the National Indian Brotherhood), is also a founding member of WCIP.

201 Bellona was apparently sponsored by the Norwegian Royal Ministry of Foreign Affairs to travel to Moscow with the aim of mobilizing *green* groups there. This was felt to be a useful method for bringing Russian environmental problems out into the open from *inside* rather than outside the state (Skagestad pers.comm.).

202 Under the operating procedures of the London Convention, NGOs can submit documents for discussion; can actively participate in discussions; can lobby delegations during breaks; and can participate in committees, working groups and drafting groups. For further information see Peet (1994).

203 From information contained in Greenpeace International (1993c).

204 Peet (1994:7). Note that the author of this comment represents Friends of the Earth at IMO, LC and IWC meetings.

205 Greenpeace International (1994).

206 Note, however, that the IWC is not as lenient in its acceptance of environmental NGOs as the London Convention. After payment of a registration fee to the IWC, observers are permitted to submit a brief opening statement on paper, which is circulated among the delegations. They are also permitted to talk to delegates during breaks. However, none of the IWC observers are permitted to take an active role in discussions (Peet 1994:4).

207 Norwegian whalers defend their hunting as part of traditional culture. Although economically whaling may be an insignificant proportion of Norwegian GNP, it is far from insignificant to the economies of traditional whaling villages. Minke whales, the subject of the hunt and a resource which the Norwegians consider is in abundance, are also considered by them to be the *rats* of the sea, scavenging fish from fishermen and food from other whale species which *are* endangered. The irony is that Norway expressed this concern over the devastation Minke whales caused to other species, thereby contributing to their near-extinction, without acknowledgement that Norwegian traditional whalers had themselves partly contributed to that same destructive process. See Greenpeace International (1992); for Norway's official position on whaling, see Holst (1993); for Norway's indigenous perspective, see Blichfeldt (1992).

208 Greenpeace International (1993e).

209 Greenpeace International has consultative status within ECOSOC and observer status or the right to attend the meetings of, among others, the Basel, Berne, Bonn and Barcelona Conventions; the Biodiversity Convention; CITES; the FAO; the IAEA Standing Committee on Nuclear Liability of the IAEA; the IMO; the IPCC and the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change; the IWC; the London Convention; the Vienna Convention and Montreal Protocol; the Oslo Convention; and the UNEP Governing Council and Regional Seas Programme (Greenpeace International Document dated 24.10.94).

210 Friedheim (1988:497) and Osherenko & Young (1989:49).

211 For summaries of two similar case studies, the Arctic National Wildlife Refuge and the James Bay Project, see Switzer (1994:Ch.16).

212 Government of Canada, Federal Environmental Assessment Review Office, undated 'Report of Environment Assessment Panel, APP Northern Component':93.

213 The review process has been described by Dryden as '...one of the longest and most intensive, costly, and circuitous environmental reviews that any project has had to endure.' See Dryden (1990:103-138).

214 Petro-Canada (1983:5). This, and similar references below, refer to Petro-Canada's Annual Reports; their corresponding years and page numbers are cited where appropriate.

215 The four tiers were the National Energy Board, the Federal Departments of Transport and the Environment (Environmental Assessment and Review Process), as noted above, but also including at a later date, the Federal Territorial Waters Board.

216 'NAFTA', done in December 1992, *reprinted in* 32 ILM 605 (1993).

217 That is, the movement of goods, services, capital and persons.

218 This is not meant to detract from the policy-making abilities of the regional governments in Canadian territories, nor the Nordic regional associations.

219 That is, without the active and legitimate participation of the indigenous people, whose cultures and lifestyles may be directly affected by environmental laws.

220 Subjecting polar scientists, expeditioners and program planners to regulations on their behaviour is not considered a direct physical impact on the sponsoring states. This is because such laws affect only a very small percentage of the total state population and have no appreciable economic cost. For example, it is impossible to predict the cost to industry of being *unable* to mine possible mineral resources in the Antarctic (where such action is prohibited). Furthermore, until a Liability Annex is negotiated, the cost of responsible environmental behaviour must be considered to be a normal operating cost in the Antarctic. Until proven sovereign title is granted to the claimant nations, or until a Liability Annex clarifies the issue, it remains unclear whether states can claim environmental harm to their claimed territory.

221 Coincidentally the UNCED process occurred during the time of the disintegration of the former Soviet Union and its hegemonic rein over the Eastern Bloc countries.

222 The very recent discovery of a ruptured oil pipeline spilling its contents into the Russian Arctic is a prime example of this degradation. This is only one of the myriad of environmental problems having been discovered since the dissolution of the Soviet Union. For further discussion see for example 'Who's minding the Arctic?' by Terry Fenge, *The Globe & Mail*, 3 November 1994.

223 This is taken from Recommendation VIII of Meeting I, 1961, emphasis added. See Heap (1990a:2402). Heap (1990a) lists all Antarctic Treaty Consultative Meeting Recommendations, which serves as a good primary source of the history of environmental concern in the Antarctic.

224 The Antarctic Treaty System was described similarly in Article 2.1 of CRAMRA.

225 The third tier of law, domestic legislation, is unique to the constitutional processes of each Party to the Treaty. In Australia's case, a total of more than 120 separate pieces of domestic legislation are in some way or another applicable to Australia's Antarctic Territory. See Australian Government, House of Representatives, Standing Committee on Legal and Constitutional Affairs, 'Legal Regimes of Australia's External Territories' 1991.

226 Done in Washington, 1 December 1959; entered into force 23 June 1961; *reprinted in* 402 UNTS 71 (1959).

227 'Agreed Measures', Recommendation III-8, 1964; *reprinted in* Heap (1990) pp2403-6.

228 'CCAS', done in London, 1 June 1972; entered into force 11 March 1978; *reprinted in* 11 ILM 251 (1972).

229 Hereinafter 'CCAMLR'.

230 'Madrid Protocol', done in Madrid, 04 October 1991; *reprinted in* 30 ILM 1455 (1991). In the context of this study, the Madrid Protocol is considered a component of the wider Antarctic Treaty System, although at the time of writing, this regime had not yet entered into force.

231 'CRAMRA', done in Wellington, 2 June 1988; *reprinted in* 27 ILM 868 (1988).

232 Although inactive and thus not strictly speaking a component of the System as defined above by the Parties themselves, this Convention is included in the discussion for several reasons. First, it contains valuable insight into the philosophy of the Antarctic Treaty Parties with regard to the contentious issue of mineral resource exploitation. And second, the rejection of this Minerals Convention led directly to the adoption of the Madrid Protocol.

233 For the text of the Treaty see Appendix 3. A list of its signatories and their status is included as Appendix 2.

234 Basel Convention, Article 4.6. The Basel Convention is discussed in Kummer (1992).

235 The London Dumping Convention title was changed to the London Convention in 1992.

236 This may not be strictly true since there is quite a degree of support for the idea that parts of the LOSC, for instance, have evolved into customary law. At a recent seminar on the Law of the Sea, Dr Thomas Mensah, Director of the Law of the Sea Institute in Hawaii, commented that even if the LOSC had not entered into force, many of the rights, obligations and disputes would have been dealt with under customary international law (Mensah 1994).

237 States notify the United States, as Depositary, of their acceptance of a Meeting Recommendation. Of the nearly 200 Recommendations to date, almost two-thirds have been accepted in this manner. However, these figures cannot be used as an accurate guide to effectiveness for a number of reasons: i) it is not necessary for all Parties to have agreed on

an action (for example, the date of a meeting) for that action to proceed; ii) some Recommendations may supersede earlier ones, or may be embodied in legally-binding instruments; and iii) some Recommendations may not be relevant to some Parties and thus would not require their formal acceptance (Jackson, pers.comm).

238 This became a particularly prominent issue for discussion during the UN 'Question of Antarctica' in the 1980s. Peter Beck has reviewed the UN agenda with regard to the Antarctic each year from 1984 to 1994. His articles are published annually in *Polar Record*..

239 'Discord' is most probably interpreted to mean activities like wars or military hostilities, although this author has argued elsewhere that the UN challenge to the Treaty System's legitimacy waged during the 1980s was potentially 'international discord' (Green 1991). Further discussion of this UN challenge can be found at the end of this Chapter.

240 See Figure 3, p127.

241 It is not known why the Seals Convention took six years to ratify. It is suggested that this was perhaps because the resource was already depleted and hence there was little urgency in the matter. This suggestion is made in light of the fact that CCAMLR (described in the next section) took only two years to enter into force. In this instance, the protection of krill stocks *before* major harvesting began, was seen as a priority. The Contracting Parties to the Seals Convention are: Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, (former)USSR, UK, USA, Poland, Germany, Canada, Brazil and Italy.

242 See Figure 3 (p.127) which indicates the nexus between CCAS and the International Legal System.

243 The Madrid Protocol later sought the banning of dogs in Antarctica and they have since been removed from the continent.

244 For the relationship between this program and CCAMLR see El-Sayed (1994:8).

245 Figure 3 on p.127 indicates that, like CCAS, CCAMLR is linked to the global legal order. The only CCAMLR signatory which is not a party to the Antarctic Treaty is the European Economic Community.

246 SCAR is not an organisation, *per se*, of the Antarctic Treaty System but an organ of the International Council of Scientific Unions (ICSU) and has an advisory function only within the Treaty System.

247 Brownlie (1990:58). For a discussion of the concept of legal personality, see Brownlie (1990:58 and 681-2). This means CCAMLR is, or has:

- a permanent association of states, with lawful objects, equipped with organs;
- a distinction, in terms of legal powers and purposes, between the organisation and its member states; and
- the existence of legal powers exercisable on the international plane and not solely within the national systems of one or more states.

248 The Scientific Committee now publishes a journal titled *CCAMLR Science* (Vol. 1 1994).

249 This terminology is emphasized to denote the widely differing opinions on actual krill biomass. For example, estimates of krill numbers have ranged from 135 million metric tonnes to 1.35 thousand million metric tonnes - one order of magnitude difference. Furthermore, it is now thought that krill live for at least 5 years, while initially it was thought more likely to be only 2 years. This latter discrepancy has major implications for the maturation age of krill and hence for conservation policy. The paucity of basic knowledge about krill makes effective resource management almost impossible. For explanatory papers see (Miller 1991) and Nichol & de la Mare (1993).

250 This terminology 'greatest net annual increase' presumably refers to numbers.

251 Article XV. On the issue of current perception of ecosystem management within the particular purview of fisheries, see Harden Jones (1994:53-7).

252 This was also restated in CRAMRA Article 9(b).

253 While there was, at this stage, hydrocarbon extraction in the Arctic, the Arctic is a quite different environment to the Antarctic. Proximity to inhabited areas, smaller bergs, milder weather, major shipping routes, among other factors, are important distinctions between the polar regions. Wolfrum (1986) and Vicuna (1988) discuss the economic potential of the Antarctic.

254 In this regard, see Bilder (1985); Beck (1989c); Beeby (1989); Blay & Tsamenyi (1990); and Bergin (1990).

255 Joyner, for one, does not necessarily agree with this perception. In fact, he considers that parts of CRAMRA live on in the Madrid Protocol. See Joyner (1994) for an interesting treatment of this issue.

256 One perspective on the legality of mining in the Antarctic can be found in Blay and Piotrowicz (1991).

257 Note that Joyner's definition of legitimacy accords roughly with the definition used by this study. For further elaboration on this theme see Joyner (1995).

258 For the chronology and discussion of this event see Bergin (1990); Burgess (1990); and Beck (1992a). The joint Franco-Australian statement is cited as Hawke and Rocard (1989).

259 This is probably due in part to the large amount of background work already completed and contained in other components of the System, especially CRAMRA. The similarity in language between the two instruments is notable.

260 For a comprehensive evaluation of two environmental NGOs and their Antarctic campaigns, see Williams (1993). For a more general overview, see Rothwell (1990).

261 For an overview of ACF and its Antarctic program, see Mosely (1989).

262 Williams notes that Greenpeace may have tried to attract Consultative Party status within the Treaty System by establishing the base and conducting scientific programs. However, the Antarctic Treaty System is closed to all but states, with the exception of CCAMLR which invited regional groups of states with an economic interest to accede to it.

263 The Parties to the Protocol and their dates of ratification can be found in Appendix 2.

264 For Australia's treatment of its obligations under this Article, see Blay and Green (1994).

265 It seems oddly unnecessary to have to repeat such an emphasis on cooperation, however this may have been directed at Parties previously less than environmentally-friendly in terms of the conduct of their national scientific programs or uncooperative with regard to their inspection obligations under Article VII of the Antarctic Treaty.

266 In the meantime, representatives from SCAR (including its Group of Specialists on Environmental Affairs and Conservation (GOSEAC)), CCAMLR, and the Council of the Managers of National Antarctic Programs (COMNAP) (including the joint SCAR/COMNAP Standing Committee on Logistics and Operations (SCALOP)) are all expected to participate in the detailed work of TEWG to provide expert advice as requested or required (ATCM 1994).

267 It is interesting to note that Greenpeace, as an organization, is not able to be a party to the Antarctic Treaty. Greenpeace was, therefore, operating a base in the Antarctic outside the Antarctic Treaty System. However, Greenpeace has always maintained their compliance with the spirit and intent of the Treaty, and indeed this IEE is evidence of their respect for the Protocol as well.

268 Annex IV on Prevention of Marine Pollution prohibits the discharge at sea within the Antarctic Treaty Area of dirty ballast water. It is implied that *dirty* ballast water is that which is contaminated by oil or oily substances. Nothing in the Protocol deals with microorganisms that may reside in clean ballast and which, if discharged, may have a deleterious effect on the Antarctic marine ecosystem. However Article IX of the Agreed Measures prohibits the introduction of non-indigenous species into the Antarctic Treaty Area. Little work has been done on this topic, which has the potential to be of major importance particularly in light of the recent declaration by Australia of an EEZ off its Antarctic Territory. For an indication of the issues involved, see J Johanson (1992).

269 For discussion of the notion of the ATS as an objective regime, see Birnie (1985) and Wyrozumska (1993).

270 The Greenpeace *World Park* Base was established in 1986-87; a renegade expedition by Pakistan in 1990-91 established *Jinnah* station; and another renegade UN-sponsored expedition to establish an Antarctic station was scrapped in 1991. While these events may have been minor irritants to the Antarctic Treaty States, they were never seen as a serious challenge to the System, in the sense that nothing was done to attempt to stop them or remove them, despite Greenpeace's reliance on emergency support from the nearby US and NZ bases (Williams 1993:62).

271 Theoretically it may be possible to obtain information from any Antarctic Treaty Party on the Madrid Protocol. If, for example, an international environmental agency was pursuing a Treaty Party for a suspected breach of environmental regulations, and the documentation could not be obtained from that country, it might be possible to obtain it from another more liberal country like Australia because each Treaty Party receives copies of all documentation before they became public. This issue is complicated by several factors, including whether the agency has standing in Australia; whether the information sought is actually held; and whether that information has been made available for public release by the Treaty Parties (Jackson, pers.comm).

272 See the discussion regarding CRAMRA's liability provisions on p.142. See also Blay & Green (1995) for a comprehensive overview of liability with regard to the Madrid Protocol.

273 For a list of the ratifying Parties and dates, see Appendix 2.

274 For comments on alternate interpretations of the status of the Antarctic see Goldsworthy (1989); Law (1989); Rothwell (1990); and Suter (1991).

275 Kimball (1990) and Beeby (1990).

276 For a range of opinions on this issue, see Herr et al (1990) generally.

277 That is, the area south of the Antarctic Convergence and south of 60° South.

278 For one perspective of some negative aspects of the Madrid Protocol, see Vicuna (1994).

279 For a useful treatment of this notion with regard to the politics of science, see Elzinga and Bohlin (1989).

280 Benedick (1991) has described what he terms a new kind of multilateral diplomacy which became apparent during the Montreal Protocol negotiations, when States were faced with what appeared to be an insurmountable problem of the regulation of CFCs. According to Benedick, the fact that the participants succeeded in negotiating a ground-breaking accord like the Montreal Protocol gives added incentive and confidence to diplomats the world over to try this fresh approach to problem-solving.

281 Here a distinction must be made between pan-Arctic as opposed to territorial or municipal regimes. The work illustrated earlier the existence of such organizations as the Inuit Circumpolar Conference, the Nordic Council, the Nordic Sámi Parliament, the Barents Euro-Arctic Council, the Northern Forum and others, which do not embrace the whole of the Arctic. On the subject of trade and cooperation in the Euro-Barents region, see Skagestad (1993).

282 Griffiths (1989) uses the terms *minimal*, *co-ordinate* and *integration* regions. For a discussion of the definitions and the minimal categorization of the Arctic, see Griffiths (1989:213-222).

283 For discussions on the concept of an Arctic Region Council, see Pharand (1992); Slipchenko (1992) and Government of Canada (1992). This issue is discussed further in Chapter 5 on p.238.

284 Russia has given its support for the Arctic Council proposal via its 'Declaration of Friendship and Cooperation' with Canada, dated 1 February 1992, and further supported by 'The Canada-Russia Arctic Cooperation Agreement' dated 19 June 1992.

285 A statement by Canadian Foreign Affairs Minister André Ouelett, dated 30 April 1994, reported that the US Secretary of State Warren Christopher had 'responded positively' to Ouelett's request for US support for the creation of an Arctic Council (Ouelett 1994:4). This was the opposite of the previously stated US position.

286 One recent example is the fact that when in opposition, the current Chrétian Liberal Government of Canada condemned the testing of US military hardware on Canadian soil and vowed to have it stopped once in office. But as the current serving government they have just renewed the US contract for missile testing for another year (ABC Radio News 4.2.94).

287 For example, the long running 1911 Treaty on Northern Fur Seals finally broke down in 1984 when the US declined to extend the life of the Treaty through a protocol.

288 On the question of reservations and declarations to LOSC generally, see Blay et al (1991).

289 For example, the Polar Bear Convention and CITES were signed in the same year, and the Polar Bear Convention invokes but does not acknowledge CITES directly. For further discussion on this link, see p.191. The Nordic Convention on the Protection of the Environment (done in Stockholm on 19 February 1974, *reprinted in* 13 ILM 591 (1974), in force 5 October 1976) recognises the possibility of links: 'The Convention shall not apply insofar as environmentally harmful activities are regulated by a special agreement between two or more of the Contracting Parties'(Article 1.2). The Helsinki Convention (on the Protection of the Marine Environment of the Baltic Sea Area, done in Helsinki on 3 May 1980, *reprinted in* 19 ILM 835 (1980)) does make direct reference to its relationship with other conventions: 'The provisions of the present Convention shall be without prejudice to the rights and obligations of the Contracting Parties under treaties concluded previously as well as under treaties which may be concluded in the future, furthering and developing the general principles of the Law of the Sea that the present Convention is based upon and in particular provisions concerning the prevention of pollution of the marine environment.'(Article 21). Similarly the London Convention is linked to LOSC, while the Paris Convention is linked to the Oslo Convention through its Preamble.

290 These have been described in Chapter 2 and include the drift journey of Nansen in the *Fram*, 1893-96; Amundsen's voyage through the North West Passage, 1903-06; Peary's landing in the vicinity of the north pole in 1909; the 1921-24 Thule expedition of Rasmussen from Greenland to the Bering Strait; the 1926 flight by Byrd from Spitzbergen, over the north pole

and return; and the 1926 transpolar flight by Nobile, Amundsen and Ellsworth from Spitzbergen to Alaska.

291 These quotes were cited in Roots (1984:11).

292 For a more comprehensive discussion on the role the IGY played in Antarctic regime-building, refer to Chapter 3.

293 Science, of course, was always a useful tool for the advancement of technology and industry, but this period represented a fundamental shift in focus, concurrent with increasing activity in Arctic resource exploration and extraction.

294 This was quoted in Roots (1984). (The original Østreng paper apparently no longer exists.)

295 That is, functional in the sense: 'learn what we need to know then use that knowledge to advance toward our objectives or defend our position'(Roots 1984:14).

296 The report from this Working Group, Roots et al (1987) is now widely quoted in the context of Arctic scientific cooperation.

297 Dr Rogne had valuable credentials through his association with SCAR, his membership of the original working group and as Director of the Norwegian Polar Institute.

298 Document: 'Conference of Arctic Countries on Coordination of Research in the Arctic, Leningrad, December 12-15, 1988, General Summary', *in English:*5 (Hereinafter 'Anon. Leningrad Document (1988)').

299 This provisional scientific research agenda comprised projects on the upper atmosphere and near space, Arctic ecosystems, the interactions between ocean and atmosphere, Arctic climate change, geophysical studies, environmental conservation and many social and cultural issues.

300 Confidence building measures were already established through the various global programmes in operation like the International Geosphere-Biosphere Programme, UNESCO's Man in the Biosphere Programme and the World Climate Programme.

301 In fact, many of the people active in the establishment of IASC had SCAR backgrounds, and to some extent used their experiences to model IASC. 'When we saw a system, which was known to polar scientists, that worked well, then we used it...but we also saw that in some areas we couldn't use it...therefore it [IASC] is slightly different' (Rogne pers.comm).

302 Interestingly, there are areas where mutual benefit *is* obvious, as evidenced by the fact that the Chairman of both the SCAR and the IASC Working Groups on Global Change is the same person, Dr Gunter Weller (Rogne pers.comm).

303 For example, SCAR has been criticised in the past for degenerating into merely a reporting facility, rather than a mechanism for coordinating and facilitating scientific endeavour. The Members of IASC, being aware of this, would no doubt take steps to ensure this did not happen in their institution (Rogne pers.comm).

304 IASC (1990:5), emphasis added.

305 In this context the Arctic has an unspecified southern boundary.

306 This definition can be found in IASC (1992) Appendix IX 1.2-1.3. The rationale for this clarification of the meaning of 'significant Arctic research' was based on the perception that a scientific definition was more appropriate and less ambiguous than a logistical one like the common interpretation of Article IX.2 of the Antarctic Treaty. This is because scientific quality was thought to be more important than simply evidence of a *presence* on the ice (Rogne pers.comm).

307 For discussion of the nature and vulnerability of polar ecosystems see Walton (1987) and Stonehouse (1990).

308 The Sámi people of Finland, for example, see themselves as living *inside* nature: '...what is *wild* to Western people is *home* to [the Sámi]' (Alaraudanjoki, pers.comm). Klein (1994) discusses this issue in relation to Arctic indigenous people generally.

309 Osherenko & Young (1989:131). The planned reversal of the great Russian rivers from their natural northerly flow would have had unprecedented and immeasurable ecological impacts had it not been shelved in 1986 (Osherenko & Young 1989:131; Rogne pers.comm).

310 The "tragedy of the commons", as described by Garrett Hardin in *Science* (**162**:1243-1248), is the situation that develops when an individual attempts to maximise gain in a world of finite resources and thus at the expense of society as a whole. The nucleus of the concept is the unlimited use of the commons by an increasing population, to the point where the commons are ruined.

311 The 'Polar Bear Convention' *reprinted in* 13 ILM 13 (1974) is an agreement between Canada, Denmark, Norway, the former Soviet Union and the United States. Three ratifications (Norway, Canada and the former USSR) brought the Convention into force in 1976 (as per Article X.4).

312 One perspective of this new era can be found in Butler (1990).

313 Rovaniemi is a town in northern Finland, well-known as the gateway to Lapland (the home of the Finnish Sámi people).

314 This was reported by the Royal Institute of International Affairs (1990:1).

315 Ironically, Gorbachev's speech began by recalling the level of cooperation between Soviet, British and American sailors during the second World War in breaking through a German blockade to bring convoys of weapons and equipment to Murmansk.

316 For a variety of responses to Gorbachev's speech see Griffiths (1989:Ch.12); Archer (1989); Hitchins and Liander (1990); and Jalonen (1991).

317 Gorbachev (1988:45). Each of the following quotes is from the publication Gorbachev (1988), although it is noted that his speech was actually delivered in 1987. For ease of reading, the references have been shortened to page numbers only.

318 Giving a tantalizing insight into one aspect of the breakdown of the Soviet social fabric, President Gorbachev referred to the statistic that the war on drunkenness had achieved a decline in sales of alcoholic beverages by a staggering 10.7 thousand million rubles in 1986 (Gorbachev 1988:47-52). Geddie wrote, in 1882: '...it cannot be said that we know Russia and its people thoroughly, or even well. It is so colossal and so complicated a phenomenon that is presented to us, that it is not easy to fix an adequate picture of it in the mind' (Geddie 1882:18). Over 100 years later, perhaps the same can still be said.

319 The Helsinki Convention (see note 289 above).

320 On this issue compare, for example Stokke (1992:227) with Bjørklund (1993:10).

321 For example, prior to *glasnost* the former USSR had refused British scientists permission to study the progress of caesium emanating from its own Sellafield plant into the Soviet EEZ water-column in 1985. See Archer (undated:4).

322 The AEPS, *reprinted in* 30 ILM 1624 (1991).

323 The Royal Navy contracted a report which was conducted by Ash and published in 1994. The US Government similarly conducted its own investigation, cited as Government of the United States (1992b).

324 This included the environmental provisions of the LOSC not then in force. As mentioned above, Iceland is the only Arctic state to have ratified the LOSC. However, this study has illustrated several instances in which elements of the LOSC have been adopted as customary law by Arctic states (the declarations of EEZs, for example).

325 For example: 'We *will* cooperate to conserve, protect and, as appropriate, restore the ecosystems of the Arctic...' (AEPS 1993:4, emphasis added).

326 This is a UN Convention, done at Espoo, Finland on 25 February 1991, *reprinted in* 30 ILM 800 (1991). Canada, Denmark, Finland, Iceland, Russia (after the former USSR), the United States, Norway and Sweden had all signed the Convention by 11 June 1991. Importantly too, the European Economic Community is also a signatory to this Convention, which aims to minimize transboundary pollution through the application of environmental impact assessments.

327 The IASC Arctic Science Planning Conference will be held in Hanover, USA, in December 1995.

328 This information was passed on from Dr Oran Young, in a document titled 'Sustainable Development Report', 1994. It was a personal electronic mail transmission.

329 However, the Australian Mining Industry Council, supporting Australia's initial signing of CRAMRA, expressed in general terms the view that the AMIC does not like to see *any* region of the world 'locked up' to the possibility of mineral resources exploitation. See Bergin (1990).

330 Of course, the exception is the on-going dispute between Chile, Argentina and Britain concerning their overlapping claims. In this instance, *any* Antarctic policies of the three countries, environmental or otherwise, have strong political connotations.

331 It was noted earlier, for instance, that the pan-Sámi associations sprang up in response to the neglect by their governments of Sámi issues.

332 Cited as Brooke (1993).

333 See the anecdotal evidence presented in Brooke (1993:17-23).

334 CCAMLR Article 2.3(c) reads, in part '...the aim of making possible the sustained conservation of Antarctic marine living resources'.

335 The bilateral environmental relationship between Norway and the Russian Federation, for example, is a tenuous arrangement which invokes questions of sovereignty, resource exploitation, standards, transboundary pollution and economic imperatives. This situation is

succinctly described by Stokke, in which he argues that: '...it is quite convenient for Russia that its wealthy, small Nordic neighbours are highly interested in helping to solve some of the environmental problems close to own borders' (Stokke 1994:13).

336 For the background to this designation see Rothwell and Kaye (1994).

337 It is known, for instance, that CCAMLR has established a new working group on Ecosystem Monitoring and Management to replace two separate existing working groups, Krill and CCAMLR Ecosystem Monitoring Program (CEMP). Although, as mentioned earlier, CCAMLR represents a regime for the rational use of Antarctic marine living resources, it does contain provisions to ensure that harvests are sustainable and that harvested populations do not fall below recoverable levels. The primary reason for this reorientation of the working groups into one was that the work of both existing groups was diverging rather than converging, with the consequence that the actual information gained was becoming less important than questions of methodology and modelling (Nicol:pers.comm.). See also *CCAMLR Newsletter* #16, December 1994:5.

338 Heap (1990b:186). Heap cites CCAMLR and CRAMRA as two prime examples of how the issue of sovereignty has actually been beneficial to the Antarctic.

339 The Treaty System has been unable to resolve the issue of establishing a permanent Secretariat, despite the topic being on every recent agenda of the Treaty Meetings. The report from the XVIIIth Meeting in Kyoto in April 1994 noted that a working group was tackling the legal aspects of the establishment of a permanent Secretariat and the meeting, while acknowledging that further work was necessary, urged the Consultative Parties to prepare for the earliest possible resolution of this issue (ATCM/WP 37:Item 8). In the meantime, each state has a 'national contact point' for the dissemination of information.

340 This work draws heavily on Blay and Green (1994).

341 All of the Arctic 8 except Norway and Russia have signed the Agreement relating to Part XI.

342 For a comprehensive discussion of this issue see Joyner (1994), especially Ch 3.

343 This does not refer to those sub-Antarctic islands like Prince Edward and Marion Islands (RSA), Kerguelen and Crozet Islands (France), the South Sandwich Islands (Britain), and Heard Island and McDonald Islands (Australia) over which sovereignty is not in dispute and thus the declaration of extended maritime jurisdiction is not an issue. Norway has exempted Bouvet Island from its general declaration of EEZs and New Zealand has specifically excluded the Ross Dependency. Australia declared a 200 n mi 'Australian Fishing Zone' in 1979 but at the time this expressly excluded the Australian Antarctic Territory.

344 Australia ratified the Law of the Sea Convention on 5 October 1994. Federal legislation to give effect to the declaration of EEZs came into force on 1 August 1994. See Government of Australia (1994a). An Australian Geological Survey Organisation (AGSO) map, reproduced in Hobart's daily newspaper, *The Mercury* on 3.10.94, p.11, clearly depicts a shaded EEZ off the two separate sectors of the Australian Antarctic Territory (Government of Australia 1994b). A copy of the map was later received by facsimile transmission from AGSO; it confirmed that the newspaper had reproduced the AGSO map accurately.

345 The Russians have used 'the edge of stationary coastal ice' in their 1911 Imperial Decree as one parameter in the measurement of territorial water baseline determination (Joyner 1994:81). See also Joyner (1991:227-30).

346 For the purposes of legislating a prohibition on mineral resource activity in the Antarctic, the United States Government has deemed that ice (along with water and snow) is not to be considered a 'mineral' (Government of the United States 1993:§3 (9)1 - Definitions).

347 The Madrid Protocol defines its area of application as the 'Antarctic Treaty area', which, according to Article VI of the Antarctic Treaty, includes the high seas south of 60° South. Therefore it is assumed that the high seas include the deep sea bed and subsoil. On this point see Rothwell and Kaye (1994).

348 Rothwell and Kaye (1994:42). Here Rothwell and Kaye list authors who have made such a suggestion.

CLAIMS TO ANTARCTIC TERRITORY

(Source: Beck 1986b:119-23)

The area between 90° and 150° W remains unclaimed.

Argentina (Antártida Argentina)

Claim 25° W - 74° W (formerly 68°34' W) south of 60° South, including Antarctic continent and such islands as the South Orkneys.

Area 550,000 sq miles

Date Defined 1943-47; South Orkneys 1925, FID 1937.

Basis 'Argentine sovereignty over the territory is based on deep-rooted historical rights - maintained firmly in every circumstance by the Argentine governments - which are spiritually identified with the feelings of the entire people of the nation; on the superior geographical position of the Republic; on the geological contiguity of its land with the Antarctic territories; on the climatological influence which the neighbouring polar zones exercise on its territories; on the rights of first occupation; on the necessary diplomatic action and finally on its uninterrupted activities in the Antarctic territory itself". "Effective and continuous occupation has gone on since 1904 (South Orkneys)...our country is the only one which (in 1940) has lived there for 37 years...Argentina's rights are not solely dependent upon the principal fact of this occupation.'

Australia (Australian Antarctic Territory - AAT)

Claim 45° E - 160° E (excluding Adélie Land between 136° E - 142° E), south of 60° South, including 'all islands and territories'.

Area 2.4 million sq miles

Date 1933 and 1936

Basis 'Australia's claim to sovereignty over the AAT is based on acts of discovery and exploration by British and Australian navigators going back to the time of Captain Cook, and subsequent continuous occupation, administration and control.'

Chile (Territorio Chileno Antártico)

Claim 53° W - 90° W to the South Pole, but with no northern boundary.

Area 500,000 sq miles approximately, because no northern definition.

Date 1940 (following up a 1906 announcement of intent to define and claim)

Basis 'Our country holds the oldest rights to sovereignty on

this territory; as established in the first place by Spain and then later throughout our life as a Republic by successive acts of our Government and the uninterrupted exercise of such sovereignty.' "The boundaries of Chile in said polar region...constitute a natural prolongation of the national soil...(and are based on) historical data (eg. acts and discoveries by Spain)...geographic continuity of the Chilean Antarctic as regards the southern end of the American Continent...geographic contiguity (eg. geological links)...scientific factors (eg. climatic and glaciological influences)...sector theory...different manifestations of sovereignty represented by the acts of occupation realised throughout our history...diplomatic facts...administrative antecedents.'

France (Adélie Land)

Claim 136° E - 142° E, south of 60° South

Area 150,000 sq miles

Date 1924, defined 1933-38

Basis 'Sovereignty over Adélie Land, discovered in 1840 by Dumont d'Urville...explored by Charcot, crossed in recent years by the French polar expeditions rests on solid foundations. The French government is proud, in addition to having indisputable historical claims, to be able to rely on a permanent occupation.'

New Zealand (Ross Dependency)

Claim 160° E - 150° W, south of 60° South.

Area 175,000 sq miles

Date 1923

Basis 'New Zealand's claim to the Ross Dependency rests on...discovery by a British explorer (ie. Ross), certain government actions connected with territorial rights in the Ross Sea area (eg. the issue of special postage stamps for the 1907-09 Shackleton expedition)...annexation - Order in Council of 1923, subsequent exploration, certain acts of occupation upon the assumption of sovereignty, the exaction and receipt of revenue, in particular from individuals other than British subjects (ie. Norwegian whalers)...paper acts of sovereignty.'

Norway (Dronning Maud Land)

Claim 20° W - 45° E including 'that part of the mainland coast in the Antarctic extending from Falkland Islands Dependency to the AAT with the land lying within this coast and the environing sea.' No northern or southern limits defined.

Area Unknown (see definition above)

Date 1939

Basis 'Norway's right to bring the said unclaimed land under her dominion is founded on the geographical exploration work done by Norwegians in this region, in which work they have been alone.'

United Kingdom (British Antarctic Territory)

Claim 20° W - 80° W, south of 60° South, including the mainland sector centred on Graham Land, the South Orkneys and South Shetlands (included in the Falkland Island Dependencies until 1962)

Area 700,000 sq miles

Date 1908 and 1917

Basis 'The root of the United Kingdom's title to the islands and territories comprising the BAT lies in British acts of discovery between 1819 and 1843, accompanied by formal claims in the name of the British Crown. British sovereignty over these islands and territories was formally confirmed and defined by the Crown in Letters Patent in 1908 (as amended by further Letters Patent in 1917). Since then there has been in regard to the islands and territories now comprising the BAT a continuous display of British sovereignty and activity appropriate to the circumstances.'

(NB: Readers are referred to Beck 1986b:119-22 for the source of the quotations used in this Appendix.)

APPENDIX 2

ANTARCTIC STATES

	PARTIES	ANTARCTIC TREATY Date Ratified/Acceded and Status			MADRID PROTOCOL Signed/Ratified
1	Argentina	23.06.61	ATCP	OS[1]/C	S, R 28.10.93
2	Australia	23.06.61	ATCP	OS/ C	S, R 06.04.94
3	Austria	25.08.87	Acceding State		S
4	Belgium	26.07.60	ATCP	OS	S
5	Brazil	16.05.75	ATCP 12.09.83		S
6	Bulgaria	11.09.78	Acceding State		
7	Canada	04.05.88	Acceding State		S
8	Chile	23.06.61	ATCP	OS/C	S
9	China	08.06.83	ATCP 07.10.85		S, R 02.08.94
10	Colombia	31.01.89	Acceding State		S
11	Cuba	16.08.84	Acceding State		
12	Czech Republic	14.06.62	Succeeding State[2]		S
13	DPR Korea	21.01.87	Acceding State		S
14	Denmark	20.05.65	Acceding State		S
15	Ecuador	15.09.87	ATCP 19.11.90		S, R 04.01.93
16	Finland	15.05.84	ATCP 09.10.89		S
17	France	16.09.60	ATCP	OS/C	S, R 05.02.93
18	Germany[3]	05.02.79	ATCP 03.03.81		S, R 25.11.94
19	Greece	08.01.87	Acceding State		S
20	Guatemala	31.07.91	Acceding State		
21	Hungary	27.01.84	Acceding State		S
22	India	19.08.83	ATCP 12.09.83		S
23	Italy	18.03.81	ATCP 05.10.87		S
24	Japan	04.08.60	ATCP	OS	S
25	Netherlands	30.03.67	ATCP 19.11.90		S, R 14.04.94
26	New Zealand	01.11.60	ATCP	OS/C	S
27	Norway	24.08.60	ATCP	OS/C	S, R 16.06.93
28	Papua New Guinea	16.03.81	Acceding State		
29	Peru	10.04.81	ATCP 09.10.89		S, R 08.03.93
30	Poland	08.06.61	ATCP 29.07.77		S
31	Republic of Korea	28.11.86	ATCP 09.10.89		S
32	Romania	15.09.71	Acceding State		S
33	Russia	02.11.60	Succeeding State[4]	ATCP	S
35	South Africa	21.06.60	ATCP	OS	S
36	Spain	31.03.82	ATCP 21.09.88		S, R 01.07.92
37	Sweden	24.04.84	Acceding State		S, R 30.03.94
38	Switzerland	15.11.90	Acceding State		S
39	United Kingdom	31.05.60	ATCP	OS/C	S
40	United States	18.08.60	ATCP	OS	S
41	Uruguay	11.01.80	ATCP 07.10.85		S
42	Ukraine	28.10.92	Succeeding State[5]		?S
@	30 November 1994				

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1 **KEY:** ATCP = Antarctic Treaty Consultative Party
OS = Original Signatory
C = Claimant State
S = Signed Madrid Protocol
R = Ratified Madrid Protocol

2 The Czech and Slovak Republics inherited Czechoslovakia's obligations as a Non-Consultative Party with effect from 1 January 1993, the date of their succession to the Treaty

3 The German Democratic Republic was united with the Federal Republic of Germany on 02.10.90. GDR acceded to the Treaty on 19.11.74 and was recognised as an ATCP on 05.10.87.

4 Following the dissolution of the USSR, Russia assumed the rights and obligations of being a party to the Treaty. The USSR had been an original signatory to the Treaty.

5 Ukraine has asserted that it has succeeded to the Treaty following the dissolution of the USSR and thus should be entitled to ATCP status. However, it is understood that the other ATCPs have not accepted Ukraine's assertion, primarily because Ukraine does not have an Antarctic scientific research program (Fletcher, pers.comm.).

ANTARCTIC TREATY

The Governments of Argentina, Australia, Belgium, Chile, the French Republic, Japan, New Zealand, Norway, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America;

Recognising that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Acknowledging the substantial contributions to scientific knowledge resulting from international cooperation in scientific investigation in Antarctica;

Convinced that the establishment of a firm foundation for the continuation and development of such cooperation on the basis of freedom of scientific investigation in Antarctica as applied during the International Geophysical Year accords with the interests of science and the progress of all mankind;

Convinced also that a treaty ensuring the use of Antarctica for peaceful purposes only and the continuance of international harmony in Antarctica will further the purposes and principles embodied in the Charter of the United Nations;

Have agreed as follows:

Article I

1 Antarctica shall be used for peaceful purposes only. There shall be prohibited, inter alia, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvers, as well as the testing of any type of weapons.

2 The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.

Article II

Freedom of scientific investigation in Antarctica and cooperation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty.

Article III

1 In order to promote international cooperation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:

(a) information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;

(b) scientific personnel shall be exchanged in Antarctica between expeditions and stations;

(c) scientific observations and results from Antarctica shall be exchanged and made freely available.

2 In implementing this Article, every encouragement shall be given to the establishment of cooperative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica.

Article IV

1 Nothing contained in the present Treaty shall be interpreted as:-

(a) a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;

(b) a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;

(c) prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.

2 No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.

Article V

1 Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.

2 In the event of the conclusion of international agreements concerning the use of nuclear energy, including nuclear explosions and the disposal of radioactive waste material, to which all of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX are parties, the rules established under such agreements shall apply in Antarctica.

Article VI

The provisions of the present Treaty shall apply to the area south of 60° South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area.

Article VII

1 In order to promote the objectives and ensure the observance of the provisions of the present Treaty, each Contracting Party whose representatives are entitled to participate in the meetings referred to in Article IX of the Treaty shall have the right to designate observers to carry out any inspection provided for by the present Article. Observers shall be nationals of the Contracting Parties which designate them. The names of observers shall be communicated to every other Contracting Party having the right to designate observers, and like notice shall be given of the termination of the appointment.

2 Each observer designated in accordance with the provisions of paragraph 1 of this Article shall have complete freedom of access at any time to any or all areas of Antarctica.

3 All areas of Antarctica, including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, shall be open at all times to inspection by any observers designated in accordance with paragraph 1 of this Article.

4 Aerial observation may be carried out at any time over any or all areas of Antarctica by any of the Contracting Parties having the right to designate observers.

5 Each Contracting Party shall, at the time when the present Treaty enters into force for it, inform the other Contracting Parties, and thereafter shall given them notice in advance, of:

(a) all expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organized in or proceeding from its territory;

(b) all stations in Antarctica occupied by its nationals; and

(c) any military personnel or equipment intended to be introduced by it into Antarctica subject to the conditions prescribed in paragraph 2 of Article I of the present Treaty.

Article VIII

1 In order to facilitate the exercise of their functions under the present Treaty, and without prejudice to the respective positions of the Contracting Parties relating to jurisdiction over all other persons in Antarctica, observers designated under paragraph 1 of Article VII and scientific personnel exchanged under subparagraph 1(b) of Article III of the Treaty, and members of the staffs accompanying any such persons, shall be subject only to the jurisdiction of the Contracting Party of which they are nationals in respect of all acts or omissions occurring while they are in Antarctica for the purpose of exercising their functions.

2 Without prejudice to the provisions of paragraph 1 of this Article, and pending the adoption of measures in pursuance of subparagraph 1(e) of Article IX, the Contracting Parties concerned in any case of dispute with regard to the exercise of jurisdiction in Antarctica shall immediately consult together with a view to reaching a mutually acceptable solution.

Article IX

1 Representatives of the Contracting Parties named in the preamble to the present Treaty shall meet at the City of Canberra within two months after the date of entry into force of the Treaty, and thereafter at suitable intervals and places, for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering, and recommending to their Governments, measures in furtherance of the principles and objectives of the Treaty, including measures regarding:

(a) use of Antarctica for peaceful purposes only;

(b) facilitation of scientific research in Antarctica;

(c) facilitation of international scientific cooperation in Antarctica;

(d) facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty;

(e) questions relating to the exercise of jurisdiction in Antarctica;

(f) preservation and conservation of living resources in Antarctica.

2 Each Contracting Party which has become a party to the present Treaty by accession under Article XIII shall be entitled to appoint representatives to participate in the meetings referred to in paragraph 1 of the present Article, during such time as that Contracting Party demonstrates its interest in Antarctica by conducting substantial scientific research activity there, such as the establishment of a scientific station or the despatch of a scientific expedition.

3 Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting Parties participating in the meetings referred to in paragraph 1 of the present Article.

4 The measures referred to in paragraph 1 of this Article shall become effective when approved by all the Contracting Parties whose representatives were entitled to participate in the meetings held to consider those measures.

5 Any or all of the rights established in the present Treaty may be exercised as from the date of entry into force of the Treaty whether or not any measures facilitating the exercise of such rights have been proposed, considered or approved as provided in this Article.

Article X

Each of the Contracting Parties undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty.

Article XI

1 If any dispute arises between two or more of the Contracting Parties concerning the interpretation or application of the present Treaty, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2 Any dispute of this character not so resolved shall, with the consent, in each case, of all parties to the dispute, be referred to the International Court of Justice for settlement; but failure to reach agreement on reference to the International Court shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 of this Article.

Article XII

1(a) The present Treaty may be modified or amended at any time by unanimous agreement of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX. Any such modification or amendment shall enter into force when the depositary Government has received notice from all such Contracting Parties that they have ratified it.

1(b) Such modification or amendment shall thereafter enter into force as to any other Contracting Party when notice of ratification by it has been received by the depositary Government. Any such Contracting Party from which no notice of ratification is received within a period of two years from the date of entry into force of the modification or amendment in accordance with the provisions of subparagraph 1(a) of this Article shall be deemed to have withdrawn from the present Treaty on the date of the expiration of such period.

2(a) If after the expiration of thirty years from the date of entry into force of the present Treaty, any of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX so requests by a communication addressed to the depositary Government, a Conference of all the Contracting Parties shall be held as soon as practicable to review the operation of the Treaty.

2(b) Any modification or amendment to the present Treaty which is approved at such a Conference by a majority of the Contracting Parties there represented, including a majority of those whose representatives are entitled to participate in the meetings provided for under Article IX, shall be communicated by the depositary Government to all the Contracting Parties immediately after the termination of the Conference and shall enter into force in accordance with the provisions of paragraph 1 of the present Article.

2(c) If any such modification or amendment has not entered into force in accordance with the provisions of subparagraph 1(a) of this Article within a period of two years after the date of its communication to all the Contracting Parties, any Contracting Party may at any time after the expiration of that period give notice to the depositary Government of its withdrawal from the present Treaty; and such withdrawal shall take effect two years after the receipt of the notice by the depositary Government.

Article XIII

1 The present Treaty shall be subject to ratification by the signatory States. It shall be open for accession by any State which is a Member of the United Nations, or by any other State which may be invited to accede to the Treaty with the consent of all the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX of the Treaty.

2 Ratification of or accession to the present Treaty shall be effected by each State in accordance with its constitutional processes.

3 Instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America, hereby designated as the depositary Government.

4 The depositary Government shall inform all signatory and acceding States of the date of each deposit of an instrument of ratification or accession, and the date of entry into force of the Treaty and of any modification or amendment thereto.

5 Upon the deposit of instruments of ratification by all the signatory States, the present Treaty shall enter into force for those States and for States which have deposited instruments of accession. Thereafter the Treaty shall enter into force for any acceding State upon the deposit of its instruments of accession.

6 The present Treaty shall be registered by the depositary Government pursuant to Article 102 of the Charter of the United Nations.

Article XIV

The present Treaty, done in English, French, Russian, and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the United States of America, which shall transmit duly certified copies thereof to the Governments of the signatory and acceding States.

In witness whereof, the undersigned Plenipotentiaries, duly authorized, have signed the present Treaty.

Done at Washington this first day of December one thousand nine hundred and fifty nine.

APPENDIX 4

STATUS OF THE 'ARCTIC 8' IN SELECTED TREATIES, CONVENTIONS and AGREEMENTS

KEY:
- • Ratified
- o Signed, but not ratified
- x Not a party

	1	2	3	4	5	6	7	8	9	10	11	12	13
Norway	•	•	•	•	•	•	•	•	•	•	•	•	o
Sweden	•	•	•	•	•	•	•	•	•	•	o	•	o
Finland	•	•	•	•	•	•	•	•	•	•	o	•	o
Canada	•	•	x	•	•	•	•	•	•	•	•	•	o
Iceland	x	x	x	•	•	•	•	x	•	x	•	x	•
Greenland	•	x	•	•	•	•	•	o	•	•	•	•	o
United States	•	•	•	•	•	o	•	o	•	•	•	•	x
Russia	•	•	•	•	•	•	•	o	•	•	•	•	o

1 **Antarctic Treaty,** 1 December 1959,Washington, in force 23 June 1961.
2 **Convention on the Conservation of Antarctic Marine Living Resources,** 20 May 1980, Canberra, in force 7 April 1982.
3 **International Convention for the Regulation of Whaling,** 2 December 1946, Washington, in force 10 November 1948.
4 **International Convention for the Prevention of Pollution from Ships,** 2 November 1973, London, in force 2 October 1983.
5 **Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter,** 29 December 1972, London, Mexico City, Moscow, Washington DC, in force 30 September 1975.
6 **International Convention on Civil Liability for Oil Pollution Damage,** 29 November 1969, Brussels, in force 19 June 1975.
7 **Convention on Long-Range Transboundary Air Pollution,** 13 November 1979, in force 16 March 1983.
8 **Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal,** 22 March 1989, Basel, in force 5 May 1992.
9 **Vienna Convention for the Protection of the Ozone Layer,** 22 March 1985, Vienna, in force 22 September 1988.
10 **Convention on International Trade in Endangered Species of Wild Fauna and Flora,** 3 March 1973, Washington, in force 1 July 1975.
11 **Convention on Biological Diversity,** 5 June 1992, Rio de Janeiro, not yet in force.
12 **Convention Concerning the Protection of the World Cultural and Natural Heritage,** 23 November 1972, Paris, in force 17 December 1975.
13 **United Nations Convention on the Law of the Sea,** 10 December 1982, Montego Bay, in force 16 November 1994.

ARCTIC LEGAL FRAMEWORK

{Sources: American Society of International Law (Various), Brigham (1991:Appendix IV)}

1 SELECTED BILATERAL REGIONAL AGREEMENTS, CONVENTIONS, TREATIES AND PROTOCOLS

Commerce, Trade and Transport (Navigation)

1826	Denmark/Sweden Commerce and Navigation Treaty
1826	Iceland/Norway Commerce and Navigation Treaty
1826	Iceland/ Sweden Commerce and Navigation Treaty
1924	USSR/Sweden agreement on trade
1927	Finland/Iceland agreement on trade
1927	USSR/Iceland agreement on commerce and navigation
1948	Denmark/Iceland agreement on trade
1953	USSR/Iceland agreement on trade and payments (+ 1975 Protocol)
1963	Finland/Iceland agreement on navigation
1972	US/USSR Cooperative agreement on prevention of incidents at sea
1973	US/USSR agreement on agricultural cooperation
1973	US/USSR agreement on transportation
1973	US/USSR convention on taxation
1973	US/USSR protocol on cooperation in air traffic
1973	USSR/Sweden navigation agreement
1975	US/USSR trade and shipping agreements
1976	USSR/Sweden agreement on long-term trade
1976	USSR/Canada extension of existing trade agreement for further 5 years
1980	USSR/Iceland Protocol on exchange of goods
1984	Denmark (Greenland)/Sweden agreement on trade
1985	USSR/Sweden agreement on border trade (+ Protocol on Credits)
1984	USSR/Finland trade agreement
1988	Norway/USSR updated accord on search and rescue in Barents Sea

Diplomatic Relations

1925	Norway/Sweden convention on peaceful settlement of disputes
1926	Denmark/Sweden agreement on peaceful settlement of disputes
1926	Finland/Iceland convention on peaceful settlement of disputes (amended 1953)
1930	Denmark/Iceland agreement on peaceful settlement of disputes
1930	Iceland/Norway agreement on peaceful settlement of disputes
1948	USSR/Finland Treaty of friendship, cooperation and mutual assistance
1971	US/Canada Protocol on consultations (re important international problems of mutual interest)
1973	US/USSR protocol on the establishment of a Soviet trade mission in Washington and a US commercial bureau in Moscow
1973	USSR/US agreement relating to the consideration of claims resulting from damage to fishing vessels or gear and measures to prevent fishing conflicts
1983	Iceland/Sweden agreement on the peaceful settlement of disputes

Cooperation in Economics, Industry, Science and Technology

1961	USSR/Iceland agreement on cooperation in culture, science and technology
1970	USSR/Sweden agreement on economic, technical and scientific cooperation
1971	USSR/Finland Treaty on economic, technical and industrial cooperation
1972	US/USSR Cooperative agreement on medicine and public health
1972	US/USSR Cooperative agreement on space
1972	US/USSR Cooperative agreement on science and technology
1973	US/USSR agreement on studies of the world's oceans
1973	US/USSR agreement (six year) on cultural and scientific exchanges
1974	US/USSR agreement to facilitate economic, industrial and technical cooperation
1975	USSR/Denmark agreement on economic, industrial and technological cooperation
1976	USSR/Canada 10 year agreement to facilitate economic, industrial, scientific and technical cooperation
1976	Canada/USSR agreement on fisheries relations
1977	US/USSR agreement on cooperation in science and technology

1977 USSR/Iceland agreement on science and technology in fisheries and living resources of the sea
1978 USSR/Finland agreement on culture
1979 USSR/Finland agreement on education
1980 Denmark/Sweden agreement on cooperation in the field of natural gas
1981 Norway/Sweden agreement on economic cooperation
1981 USSR/Finland Arctic Technology Committee
1982 USSR/Iceland agreement on economic cooperation
1983 Norway/Sweden agreement on cooperation in the operation of communication satellites
1984 USSR/Canada protocol of consultations on the development of a program of scientific and technical cooperation in the Arctic and the north (+ 1987 extension)
1985 USSR/US general agreement on contracts, exchanges, and cooperation in scientific, technical, educational, cultural and other fields
1985 US/USSR program of cooperation and exchanges for 1986-1988
1988 Norway/USSR agreement on scientific and technical cooperation on problems of the study of the Arctic and of the north for 1988-1992

Strategic Military Issues

1951 Iceland/US defence agreement
1951 Greenland(Denmark)/US defence agreement
1958 US/Canada NORAD defence cooperation agreement
1963 US/USSR "Hot Line" agreement on direct communication in the event of a nuclear explosion or threat by a third party (+ amendments in 1971, 1984 and 1985)
1970 USSR/Sweden agreement on cooperation in the use of nuclear energy for peaceful purposes
1972 US/USSR treaty on limitation of anti-ballistic missile systems (+ interim agreements, SALT I)
1973 US/USSR agreement on the basic principles of negotiation on the further limitation of strategic offensive arms
1973 US/USSR agreement on the prevention of nuclear war
1973 US/USSR agreement (10 year) on scientific and technical cooperation in the peaceful uses of atomic energy
1974 US/USSR treaty on the limitation of underground nuclear weapon tests
1976 US/USSR treaty on limitation of underground nuclear explosions for peaceful purposes
1979 US/USSR strategic arms limitation treaty (SALT II)
1987 US/USSR agreement to establish a crisis control centre for accidental threats of a military nature
1987 US/USSR treaty on the elimination of intermediate-range and shorter-range missiles (INF Treaty)
1990 USSR/US agreement on troop reductions in Europe
1990 USSR/US agreement on early destruction of part of chemical weapons arsenals
1990 USSR/US START agreement on inspection of warheads
1993 USSR/US START II ratified

Sovereign Jurisdiction

1957 USSR/Norway sea boundary demarcation agreements (+ 1973)
1967 Norway/Sweden declaration on Sweden's and Norway's maritime territory in the NE Skagerrak
1979 USSR/Finland boundary maintenance
1981 Iceland/Norway agreement on the continental shelf in the area between Iceland and Jan Mayen

Ecosystem Management

1972 US/USSR cooperative agreement on environmental protection
1988 Norway/USSR agreement on environmental cooperation
1988 Finland/USSR cooperation on environmental & scientific matters
1989 USSR/Sweden agreement on Baltic pollution

2. MULTILATERAL REGIONAL INSTRUMENTS

Wildlife Protection

1911 Northern Fur Seal (Great Britain for Canada, US, USSR and Japan) regime for protection of seals. (Replaced by 1957 agreement below)
1957 Interim Convention on Conservation of North Pacific Fur Seals {Canada, Japan, USSR, USA, adopted 7.5.1976, amended 1963, 1969, 1976, 1980 but US failed to ratify 1984 protocol extending life of regime.}

1973 Agreement on Conservation of Polar Bears {13 ILM 13, Canada, Denmark, Germany, Norway, USA, USSR, in force 26.5.1976}

Fisheries

1959 Agreement Concerning Measures for Protection of the Stocks of Deep Sea Prawns, European Lobsters and Crabs {Denmark, Norway and Sweden, in force 26.1.1953, amended 14.10.1959)

1973 Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts {Denmark, Finland, Germany, Poland, Sweden, USSR, in force 28.7.1974}

1974 Regulation of the Fishing of North-East Arctic Cod (USSR withdrew 1974)

Sovereignty/Security

1872 Agreement on Spitzbergen {Russia, Sweden-Norway} defined Svalbard as *terra communis*

1920 Treaty on the Status of Spitzbergen

1985 Japan/US/USSR Air Traffic Control Agreement

Ecosystem Management

1972 Convention for the Prevention of Marine Pollution by Dumping from Ships & Aircraft ('Oslo Convention', in force 07.04.1974)

1974 The Nordic Environmental Protection Convention {Denmark, Finland, Norway, Sweden, in force 5.10.76}

1974 Convention on the Protection of the Marine Environment of the Baltic Sea Area {'Helsinki Convention'; Denmark, Finland, Germany, Poland, Sweden, USSR, in force 2.5.1980}

1974 Convention on the Prevention of Marine Pollution from Land-Based Sources {'Paris Convention'; Denmark, France, Netherlands, Norway, Portugal, Spain, Sweden, UK, EEC, in force 06.05.1978)

1979 Convention on Long-Range Transboundary Air Pollution {'LRTAP'; Sweden, Ukraine, USSR, in force 17.11.1979}

1982 Northern Sciences Network - exchange information, facilitate cooperation between countries in planning, conducting and reviewing UNESCO's Man in the Biosphere program activities in the Northern areas.

3. GLOBAL

1946 International Convention for the Regulation of Whaling (in force 10.11.1948, amended 4.5.1959)

1951 International Plant Protection Convention (control of pests & diseases & preventing spread across boundaries, in force 3.4.1952)

1956 Treaty Establishing the International Atomic Energy Agency (IAEA)

1958 Convention on the Continental Shelf (in force 10.6.1964)

1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (in force 10.10.1963)

1964 Convention for the International Council for the Exploration of the Sea (amended, + Protocols 1970, 1975, in force 22.7.1968)

1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof (in force 18.5.1972)

1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and on their Destruction (in force 26.3.1975)

1972 Convention on the International Regulations for Preventing Collisions ('COLREG'; applies to all vessels on the high seas, in force 15.07.1977)

1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter ('London Convention'; in force 30.08.1975)

1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (in force 1.7.1975)

1973 Convention for the Prevention of Pollution from Ships ('MARPOL'), + 1978 Protocol (in force 02.10.1983)

1980 International Convention for the Safety of Life at Sea ('SOLAS'; First edition 1914, updated 1974, in force 25.05.1980) (see esp. Chapter 5 relating to polar regions)

1982 UN Convention on the Law of the Sea ('LOSC'; in force 16.11.94)

1985 Vienna Convention for the Protection of the Ozone Layer +

1989 _____ Montreal Protocol (to reduce CFCs) +

1990 _____ London Revision of Montreal Protocol (total CFC phase-out)

4. UNILATERAL REGIONAL & MISCELLANEOUS

1970 Canadian Arctic Waters Pollution Prevention Act (establishing a NW Passage 100-mile pollution prevention zone)

1978 International Atomic Energy Agency Statement on Revised Definition and Recommendations Concerning the Dumping of Radioactive Wastes and Other Matters {*reprinted in* 18 ILM 822, May 1979}

1991 USSR Regulations for Navigation on the Seaways of the Northern Sea Route (published in Notices to Mariners and *reprinted in* translated form in *International Challenges* **12** #1 (1992) pp121-6)

DRAFT ARCTIC TREATY

(Source: Pharand 1992:190-5)

Preamble

The governments of Canada, Denmark, Finland, Iceland, Norway, Sweden, the Russian Republic and the United States of America;

Recognizing the increasing concern of the indigenous peoples of the Arctic Region for the deterioration of their environment and their traditional way of life;

Realizing the vulnerability of the Arctic Region to climatic and environmental change that can affect the well-being of all Northern States;

Noting that, pursuant to the United Nations Convention on the Law of the Sea (Article 123), States bordering an enclosed or semi-enclosed sea have an obligation to endeavour directly or through an appropriate regional organization, to coordinate their activities related to scientific research, the protection of the marine environment and the conservation of the living resources of the sea;

Noting also that their obligation includes the invitation of other interested States or international organizations to cooperate with them in relation to those activities;

Believing that regional cooperation should lead to the use of the Arctic Region for peaceful purposes only;

Affirming that such peaceful uses are in the interest of all humanity and in furtherance of the first purpose of the United Nations, which is to maintain international peace and security;

1 Area of Application

For the purposes of the present Treaty, the 'Arctic Region' means the area north of 60° North Latitude, including the Aleutian Islands, Labrador and the region of northern Quebec known as 'Nunavik'.

2 Purposes

The main purposes of the Arctic Region Council (hereinafter referred to as 'Council') are:

(1) to facilitate regional cooperation generally among its Members;
(2) to insure the taking of measures for the protection of the environment;
(3) to promote the coordination of scientific research;
(4) to encourage the conservation and appropriate management of living resources;
(5) to foster sustainable economic development;
(6) to further the health and social well-being of the indigenous and other inhabitants of the Arctic Region;
(7) to promote the use of the Arctic Region exclusively for peaceful purposes.

3 Membership

The founding Members of the Council shall be the eight States whose territory projects north of the Arctic Circle : Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States of America.

4 Organs of the Council

The Council shall be composed of an Assembly and a Commission, as the two main organs, and a Secretariat as a subsidiary organ.

(1) The Assembly

The Assembly shall consist of all Members of the Council.

The Assembly may discuss all questions relating to the purposes of the Council and shall establish general policies for the coordination of the activities of the Council and its Members. It may make recommendations to the Members or to the Commission on measures to be taken for the fulfilment of the purposes of the Council.

The Assembly shall elect the four non-permanent Members of the Commission and appoint the Secretary of the Council. It may establish such subsidiary organs as are required to exercise its functions.

A majority of Members of the Assembly shall constitute a quorum and its resolutions shall be adopted by consensus. In the absence of a consensus, resolutions shall be adopted by a two-thirds majority. The Assembly shall adopt its own rules of procedure and elect its President.

(2) The Commission

The Commission shall consist of twelve Members, of which the founding Members shall be permanent. The four non-permanent members shall be elected by the Assembly, on the basis of an equitable representation of the admitted Members. The non-permanent Members shall be elected for four years, except for the first election when two shall be elected for two years only.

The Commission shall decide on measures to fulfil the purposes of the Council and on the implementation of such measures. It may establish subsidiary organs required to exercise its functions.

The Commission shall adopt its resolutions by consensus or, in the absence of consensus, by a vote of eight members. The Commission shall establish its own rules of procedure and elect its President.

(3) The Secretariat

The Secretariat shall be located on the territory of one of the founding Members. It shall comprise a Secretary and such staff as may be required. The Secretary shall be the administrative officer of the Council and shall be appointed by the Assembly on the recommendation of the Commission. The Secretary shall act in that capacity at all meetings of the Assembly and of the Commission. The Secretary shall make reports to the Assembly on the work of the Council at its regular meetings.

5 Meetings

Regular meetings of the Assembly and of the Commission shall be held every other year.
Special meetings may be held at such other time and place as each organ may decide.
Regular meetings shall be held in the Arctic Region and under the auspices of one of the founding Members in rotation.

6 Expenses

Each Member shall bear its own expenses, unless otherwise agreed. The expenses of the Secretariat shall be born by the Member on whose territory it is located.

7 Settlement of Disputes

Any dispute as to the interpretation or application of this Treaty shall be resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means to which the parties to the dispute agree.

8 Entry into Force, Amendments and Review

(1) Entry into Force

The present Treaty shall enter into force upon signature (or after ratification) by all of the eight founding Arctic States. It shall come into force for each of the other Members at the time of their signature (or after their ratification/accession).

(2) Amendments

Amendments to the Treaty shall be adopted by the Assembly on the recommendation of the Commission. Such adoption shall be made by consensus, or failing that, by a vote of two-thirds.

Amendments shall enter into force upon signature (or after ratification) by two-thirds of the members.

(3) Review Conference

After the Treaty has been in force for twenty-five years, any Member may request a Conference to review the operation of the Treaty.

Such Conference shall be held on the recommendation of the Commission and approved by the Assembly, either by consensus or a vote of two-thirds. Any amendment adopted by the Conference shall enter into force after signature (or ratification) by all Members.

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